

Additional Response # 1

In response to Question 2 of the February 4, 2008 Information Request, it is stated tht approximately 1-2 drums (55-110 gallons) of MEK are accumulated per month at the Pulaski Facility.

- a. The start date of the drums, as stated in the response, was an estimate given to me. For the response, I did not research the accuracy of the information nor did I reconcile the quantity of these drums versus the reported number of drums per month.

One of the drums was the transported drum from Baylis as reported in the response to Question 18 of the February 4, 2008 report.

We have since researched and questioned personnel. We cannot confirm when the drums, observed on December 11, 2007, were generated.

- b. The average amount of gallons per month of dirty MEK from the last 6 quarters is 113.

The monthly amount of dirty MEK routinely generated varies with production as stated below:

This is calculated below:

1st Qtr 2008 – Base Amount - Approximately 206 gallons per month.

This amount was determined based on the Masking Team Leader's MEK maintenance procedure.

45 - 51 gallons of dirty MEK is reported to be generated every week on a 6 day working week. (See Attachment 1a.)

The average of 48 gallons per week times 4.3 weeks per month is 206 gallons per month. (This is a daily average of 7.5 – 8.5 gallons per day.)

The amount was also verified by observation of the dirty MEK collected.

1 drum of dirty MEK was started on March 7 and was filled on March 18

1 drum of dirty MEK was started on March 18 and was filled on March 26.

(Please note that the current Masking Team Leader started in this position in January 2008. The former Masking Team Leader was unable to provide us with the same dirty MEK data for prior periods.)

The 1st Quarter 2008 amount, along with production data, was used to estimate the gallons of "dirty" MEK generated per month for the prior 5 quarters. Attachment 1b contains a spreadsheet with the details. Below is a quarterly breakdown.

2008	Avg Gal/Mon
1 st	206
2007	
4 th	126
3 rd	94
2 nd	15
1 st	56
2006	

Additional Response # 1

4th

181

- c. As stated above, the generation date for all 4+ drums is unknown and the reported date may be inaccurate for at least one of the drums.

The 1-2 drums was an estimate based on the Pulaski manifests for MEK for 2005/2006, as follows:

Year/Month	Drums	Month	Avg/Mon
2005			
Mar – Jun	3	3	1
Jun – Sep	5	3	1.7
Sep – Dec	5	3	1.7
2006			
Dec – Mar	7	3	2.4
Mar – Oct	12	6	1.7

Attachment 1a



Print - Clear All

Date: Tue, 15 Apr 2008 13:41:55 -0700 (PDT)
From: "Karen Keffer" <ep_pulaski2@yahoo.com>
Subject: MEK USage at Pulaski
To: "Michael Castor" <easternplating@yahoo.com>

Michael

I went over with Landy the MEK usage . This is what we come up with

We have 4 MEK Tanks
1 Large 22 gallon tank
1 Small 8 gallon tank
2 Medium 11 gallon tank

We keep the 1 Large 22 gallon tank about $\frac{1}{2}$ full or 11 gallons
We keep the 1 Small 8 gallon (split tank 4 gals per side) tank about $\frac{1}{2}$ full or 4 gallons (2 gallon per side)
We keep the 2 Medium 11 gallon tank about $\frac{1}{2}$ full or 6 gallons

The tanks are emptied , cleaned and filled every Friday totaling 27 gallons of MEK.

1 Side of the small 8 gallon tank is changed daily (2 gals) 2 x 6days= 12 gals

1 of the med. 11 gallon tank is changed 1 – 2 times per week (depending on the workload) = 6 – 12 gals

We are using about 45 – 51 gallons of MEK per week (6 working days)

Thanks Karen

between 0000-00-00 and 9999-99-99

Attachment 1b
Pulaski Dirty MEK Generated

		Total Units per QTR	%	Avg Monthly Dirty MEK Gallons
2008	1st	13,216	100%	206
2007	4th	8,080	61%	126
	3rd	6,008	45%	94
	2nd	961	7%	15
	1st	3,571	27%	56
2006	4th	11,587	88%	181
Sum of Monthly Averages for 6 Qtrs				677
Divided by 6 Quarters				6
Monthly Average for 6 Quarters				113

NOTES:

1) Dirty MEK Gallons

1st Qtr 2008 monthly average was developed using actual data from March 2008

1st Qtr 2008 monthly average is the base for all estimates.

All other Quarterly amounts were estimated using the units processed as a percentage of the base Quarter.

2) Units are production parts, item #1193.

These are the largest quantity unit processed.

Their production quantities represent the total units processed.

3) 4th quarter 2006 was chosen as the starting quarter for this tabulation since it was the period when we started accumulating dirty MEK for recycling.

Additional Response # 2

Please provide an estimate, in pounds, of the amount of still bottoms that have been disposed in the municipal trash.

We estimate that 71 pounds of dried still bottoms were disposed in the municipal trash.

We do not have specific dates when the still bottoms were disposed but they were most likely thrown in the trash during our Friday cleanup.

This estimated weight was determined as follows:

We determined how many pounds of still bottom were generated from 1 drum of dirty MEK.

This is 2 pounds.

Attachment 2a contains a photo of a still bottom generated from 1 drum.

(Note the still bottom in the drum had not been dried to the extent of those disposed in the trash though we believe the weight is representative.)

We determined how many drums of dirty MEK were recycled.

Additional Question Responses 1 and 6 contain the calculations for the determination of this amount.

Attachment 2b contains a spreadsheet that contains the amounts above and calculates the total amount.

This amount concurred with estimates obtained estimates from our recycler operators.

Attachment 2a



4/21/08

MEK WASTE

2 LBS WITH 5 RUNS

10 0.2

Attachment 2b
Estimated Pounds of Still Bottoms

1. Pulaski Still Bottoms

		Avg	Mos	Gallons	Lbs. Of Still
	Qtr	Gallons	per Qtr	per	Bottoms
		per Mon		per Qtr	Disposed
					Qtr
2008	1st	206	3	618	0
2007	4th	126	3	378	14
	3rd	94	3	281	10
	2nd	15	3	45	2
	1st	56	3	167	6
2006	4th	181	3	542	20
Total Lbs. Still Bottoms - Pulaski					<u>51</u>

2. Baylis Still Bottoms

# Drums Transported	10
X 2 Lbs /Drum	<u>2</u>
Total Lbs. Still Bottoms - Baylis	<u>20</u>

3. Total Lbs. Disposed

71

Notes:

- 1) There were no still bottoms disposed in the 1st quarter of 2008.
- 2) The gallons were taken from the estimates developed in Attachment 1a.
- 3) The factor of 2 lbs per drum is detailed in Attachment 2a.
- 4) The 10 drums transported is discussed in Additional Response 6.
- 5) Though there were no still bottoms generated in 4th 2006, the amount stated represents accumulation from this Qtr and recycled in 2007.

Additional Response # 3

On August 26, 2004, the Maryland Department of the Environment contacted Eastern Plating Company to inform us that we had using the incorrect generator identification number. We then contacted our waste hauler to make the correction. Attachment 3a contains the correspondence to our waste hauler.

Technical Finishers occupied the building prior to Eastern Plating's purchase of the building in November 2000.

We do not know why Technical Finishers' generator identification number was used on the identified manifests.

Attachment 3a Page 1 of 2

08/27/2004 10:59

4103420105

EASTERN PLATING

PAGE 01

1200 South Baylis Street, Baltimore Maryland 21224
Telephone: 410-342-4107
Fax: 410-342-0105
Email: ep_labs@yahoo.com

**Eastern Plating Co.,
Inc.**

Fax

To: Lisa of Environmental Enterprises, Inc.	From: Melvin L. Pollard
Fax: 1-610-792-1104	Pages: 2, including cover
Phone: 1-800-863-3865	Date: 08/27/04
Re: MDE issue with EPA ID at Pulaski Hwy	CC: Rose Peay of MDE

♦ Urgent ♦ For Review ♦ Please Comment ♦ Please Reply ♦ Please Recycle

Lisa,

Here is the letter of discrepancy that was requested from MDE to be submitted to Environmental Enterprises about the EPA ID number issue for our Pulaski Hwy facility.

I will need confirmation that the change has been implemented, so I can submit to Maryland department of the Environment. Thanks for your assistance.

Meivin 

Attachment 3a Page 2 of 2

08/27/2004 10:59

4103420105

EASTERN PLATING

PAGE 02

Eastern Plating Co., Inc.

200 South Baylis Street, Baltimore Maryland 21224
Telephone: 410-342-4107
Fax: 410-342-0105
Email: ep_jabs@yahoo.com

August 27, 2004

Environmental Enterprises, Inc.
455 Railroad Plaza
Royersford, PA 19468
Attn: Lisa

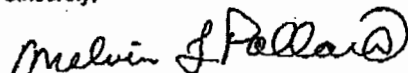
Dear Lisa:

On 8/26/2004, we received a call from the Maryland Department of the Environment in regards to the EPA ID for our Pulaski Hwy facility. According to their records, the EPA ID MDD981111750 is assigned to Technical Finishers located at Whitehead Road.

Our EPA ID number should be MD0000136366 for the Pulaski Hwy facility. They specifically identified that MDC #1042185 was incorrect. What I will need is for you to change the EPA ID in your system to reflect the correct ID and send confirmation of the change, so I can submit the change to Maryland Department of the Environment.

Thank you for your assistance in resolving the discrepancy of the EPA ID for our Pulaski Hwy facility. I look forward to receiving the confirmation within a day or two.

Sincerely,



Melvin L. Pollard
Chemist

CC: Rosa Peay, Maryland Department of the Environment

Additional Response # 4

Several manifests provided for the Pulaski facility included waste streams of n-propyl bromide and nickel acetate, nickel hydroxide

a. Nickel acetate and nickel hydroxide

The anodic coating formed in our process is porous. A nickel acetate bath is used to seal the pores.

When a determination is made to make up a new bath, the nickel is precipitated from the solution by raising the pH. This is an overnight process. The next morning, the solution has been separated into water and nickel hydroxide sludge. The water is pumped into our waste treatment system and the sludge is pumped into a collection drum.

N-propyl bromide, 2-propanol

There was a period of time when Eastern Plating used a product, Lenium ES, as a substitute for MEK. Lenium ES contains n-propyl bromide and 2-propanol.

Parts masked with the Microshield Lacquer were soaked in Lenium ES to dissolve the lacquer.

b. Nickel acetate and nickel hydroxide

Nickel Hydroxide	5%
Aluminum Hydroxide	8.5%
Nickel Acetate	1%
Water	85.5%

Attachment 4a contains the waste profile for this mixture.

N-propyl bromide, 2-propanol

1,1 Epoxy Butane	1%
N-Propyl Bromide	80-90%
Dimethoxymethane	2%
1-Methyl-Z-Propanol	2%
2-Propanol	5-10%

Attachment 4b contains the waste profile for this mixture.

Note the above components were taken from the profile.

The Lenium was used to dissolve cured Microshield.

Attachment 4c contains the MSDS for the Microshield.

c. Attachment 4d contains the MSDS for the nickel seal bath.

Attachment 4e contains the MSDS for the Lenium ES.

d. The nickel acetate/nickel hydroxide was determined to be non-hazardous waste.

The n-propyl bromide/2-propanol was determined to be non-hazardous waste.

e. The nickel acetate/nickel hydroxide sludge was determined to be non-hazardous waste when it was first generated.

The n-propyl bromide/2-propanol was determined to be non-hazardous waste when it was generated.

Additional Response # 4

f. Both waste streams were determined to be non-hazardous.

g. Nickel acetate and nickel hydroxide

The original, non-hazardous, determination was based on generator knowledge. There are no hazardous substances in the process or the base material.

It was recently verified by a lab report based on a sample taken from the collection drum at Baylis.

Attachment 4f contains the lab report for the Baylis nickel acetate/nickel hydroxide sludge.

Note – when preparing the final draft of this response I realized we did not have a lab report available for the nickel acetate/nickel hydroxide sludge at Pulaski. The Baylis lab report is an accurate representation of the profile for the material at Pulaski. The chemistry, concentrations and processes are all the same.

I will request an analytical report from the Pulaski sludge be generated and sent to you.

N-propyl bromide, 2-propanol

The non-hazardous determination was based on generator knowledge.

The MSDS shows no listed materials.

The Lenium was used to dissolve cured Miccroshield. Once the Miccroshield is cured, there are no listed materials in it.

FOR EEI USE ABS _____ Profile Log _____ Entered by _____ Date _____	ENVIRONMENTAL ENTERPRISES, INC. CONFIDENTIAL WASTE PROFILE Page 1 of 2	EEI's Approval # X44701 (completed by EEI) Sales Code _____ 31
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Customer Reference # _____		(A) GENERAL INFORMATION	
Generator Name <u>Eastern Plating - Rosedale</u>		Billing Name <u>Eastern Plating Company</u>	
Contact Name <u>Hugh McAdams</u>		Contact Name <u>Hugh McAdams</u>	
Address <u>7803 Palaski Highway</u>		Address <u>1200 South Baylis Street</u>	
City <u>Rosedale</u>		City <u>Baltimore</u>	
State <u>MD</u> Zip <u>21237-</u>		State <u>MD</u> Zip <u>21224-</u>	
Phone # <u>(410) 675-5902</u>		Phone # <u>(410) 342-4107</u>	
Fax # <u>(410) 574-5905</u>		Fax # <u>(410) 342-0105</u>	
USEPA ID# <u>MD0000136366</u>			

(B) GENERAL WASTE INFORMATION			
Name of Waste <u>Nickel Acetate Sludge/Solid</u>			
Process Generating <u>Excess from Plating Operation</u>			
Anticipated Volume <u>2-5</u>	Units: <input checked="" type="checkbox"/> Drums <input type="checkbox"/> Gallons <input type="checkbox"/> Tons <input type="checkbox"/> Yards	Frequency: <input type="checkbox"/> Monthly <input checked="" type="checkbox"/> Quarterly <input type="checkbox"/> Yearly <input type="checkbox"/> Once	
Size and Type of Container <u>55 Gallon Steel, Lined</u>			
DOT Shipping Name <u>Hazardous waste, solid, n.o.s.</u>			
Hazard Class <u>9</u>	UN/NA # <u>NA307</u>	Packing Group <u>III</u>	
Special Handling or Precautions _____	Sample Included? <input type="checkbox"/>		

(C) RCRA CHARACTERISTICS	
RCRA Waste Codes <u>None</u>	F001-F005 Solvent Waste <input type="checkbox"/>
Form Code <u>W316</u>	Waste is used in electroplating <input type="checkbox"/>
Virgin Product <input type="checkbox"/>	Spill Cleanup <input type="checkbox"/>
MSDS Attached <input type="checkbox"/>	Debris <input type="checkbox"/>

(D) CHEMICAL COMPOSITION (If actual percentages are not known, use ranges.) Total should be at least 100%. All constituents, including debris, must be specifically identified.			Is Waste:		Odor	Color
Constituent	Actual	Range	Radioactive <input type="checkbox"/>	Water Reactive <input type="checkbox"/>	<input type="checkbox"/> Nonc <input checked="" type="checkbox"/> Mild <input type="checkbox"/> Strong	<u>Varies</u>
Nickel Hydroxide	5%	%	Oxidizer <input type="checkbox"/>	Explosive <input type="checkbox"/>	% Water	
Aluminum Hydroxide	8.5%	%	OSHA Carcinogen <input type="checkbox"/>	Pesticide <input type="checkbox"/>	<input checked="" type="checkbox"/> <5 <input type="checkbox"/> >20	
Nickel Acetate	1%	%	Polymerizable <input type="checkbox"/>	Organic Peroxide <input type="checkbox"/>	<input type="checkbox"/> 5-10 Actual _____	
Water	85.5%	%	Infectious <input type="checkbox"/>	Pyrophoric <input type="checkbox"/>	% Halogens	
			(a blank box indicates "No")		<input checked="" type="checkbox"/> <1 <input type="checkbox"/> 10-20	
			Flash Point F° (closed cup)		<input type="checkbox"/> 1-5 <input type="checkbox"/> >20	
			<input type="checkbox"/> <100 <input checked="" type="checkbox"/> >200		<input type="checkbox"/> 5-10 Actual _____	
			<input type="checkbox"/> 100-140 Actual _____		pH	
			<input type="checkbox"/> 140-200		<input type="checkbox"/> <2 <input checked="" type="checkbox"/> 8-10	
					<input type="checkbox"/> 2-4 <input type="checkbox"/> 10-12.5	
					<input type="checkbox"/> 4-6 <input type="checkbox"/> >12.5	
					<input type="checkbox"/> 6-8 Actual _____	

☐ Contains TRI chemical above DeMinimus concentration. Actual concentration/range must be reported for each.

Physical State <input checked="" type="checkbox"/> Solid <input type="checkbox"/> Liquid <input type="checkbox"/> Powder <input type="checkbox"/> Sludge-Amount <input type="checkbox"/> Fused <input type="checkbox"/> Gas	Layers <input checked="" type="checkbox"/> Single <input type="checkbox"/> Bi <input type="checkbox"/> Multi	BTU/lb (X1000) <input checked="" type="checkbox"/> <2 <input type="checkbox"/> 10-16 <input type="checkbox"/> 2-5 <input type="checkbox"/> >16 <input type="checkbox"/> 5-10 Actual _____	Total Suspended Solids (% wt.) <input type="checkbox"/> <1 <input type="checkbox"/> 5-10 <input type="checkbox"/> >20 <input type="checkbox"/> 1-5 <input type="checkbox"/> 10-20	Viscosity <input type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
--	---	--	---	---

App Date: 4/25/2002 Exp Date: 3/6/2006 Status: ArchivedWaste Codes: NoneRestricted ☒M Code H111Handling Codes: T21Facility: EQ

EEI PSS#: _____

Price: _____

Comments: Last received 09/29/03

Notes: _____

Special Precautions: _____

Equipment: Full PPE

FOR EEI USE ABS _____ Profile Log _____ Entered by _____ Date _____	ENVIRONMENTAL ENTERPRISES, INC. CONFIDENTIAL WASTE PROFILE Page 1 of 2	EEI's Approval # X46806 (completed by EEI) Sales Code _____ 31
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Customer Reference #

(A) GENERAL INFORMATION

Generator Name Eastern Plating - RosedaleBilling Name Eastern Plating CompanyContact Name Hugh McAdamsContact Name Hugh McAdamsAddress 7803 Pulaski HighwayAddress 1200 South Baylis StreetCity RosedaleCity BaltimoreState MD Zip 21237-State MD Zip 21224-Phone # (410) 675-5902Phone # (410) 342-4107Fax # (410) 574-5905Fax # (410) 342-0105USEPA ID# MD0000136366

(B) GENERAL WASTE INFORMATION

Name of Waste N-Propyl Bromide Descaler (Lineum Waste)Process Generating Excess from Degreasing OperationAnticipated Volume 3 Units: ☒ Drums ☐ Gallons
☐ Tons ☐ YardsFrequency: ☐ Monthly ☒ Quarterly
☐ Yearly ☐ OnTimeSize and Type of Container 55 Gallon Steel DrumDOT Shipping Name Waste Toxic, liquids, organic, n.o.s.Hazard Class 6.1 UN/NA # UN28: 0Packing Group II

Special Handling or

Sample Included? ☐Precautions Full PPE

(C) RCRA CHARACTERISTICS

RCRA Waste Codes NoneF001-F005 Solvent Waste ☐

Form Code _____

Waste is used in electroplating ☐Virgin Product ☐Spill Cleanup ☐MSDS Attached ☐Debris ☐

(D) CHEMICAL COMPOSITION

(If actual percentages are not known, use ranges.) Total should be at least 100%. All constituents, including debris, must be specifically identified.

Constituent	Actual	Range
1,1-Epoxy Butane	1%	%
N-Propyl Bromide		% 80-90%
Dimethoxymethane	2%	%
1-Methyl-Z-Propanol	2%	%
2-Propanol		% 5-10%

Is Waste:

Radioactive ☐
 Water Reactive ☐
 Oxidizer ☐
 OSHA Carcinogen ☐
 Explosive ☐
 Pesticide ☐
 Polymerizable ☐
 Organic Peroxide ☐
 Infectious ☐
 Pyrophoric ☐
 (a blank box indicates "No")

Flash Point F°

(closed cup)

☐ <100 ☒ >200
☐ 100-140 Actual _____
☐ 140-200

Odor

☐ None
☒ Mild
☐ Strong

Color

Varies

% Water

☒ <5 ☐ >20
☐ 5-10 Actual _____
☐ 10-20

% Halogens

☐ <1 ☐ 10-20
☐ 1-5 ☐ >20
☐ 5-10 Actual N/A

pH

☐ <2 ☐ 8-10
☐ 2-4 ☐ 10-12.5
☐ 4-6 ☐ >12.5
☐ 6-8 Actual: N/A

☐ Contains TRI chemical above DeMinimus concentration. Actual concentration/range must be reported for each.

Physical State

☐ Solid ☒ Liquid
☐ Powder ☐ Sludge-Amount
☐ Fused ☐ Gas

Other: _____

Layers

☒ Single
☐ Bi
☐ Multi

BTU/Pound (X1000)

☐ <2 ☐ 10-16
☒ 2-5 ☐ >16
☐ 5-10 Actual _____

Total Suspended Solids (% wt.)

☐ <1 ☐ 5-10 ☐ >20
☒ 1-5 ☐ 10-20

Viscosity

☒ Low
☐ Medium
☐ High

App Date: 5/6/2003 Exp Date: 5/3/2005 Status: Expired

Price: _____

Waste Codes: NoneRestricted ☐M Code H129Handling Codes: T50 INCINFacility: MRS

EEI PSS#: _____

Comments:

Notes: Must be pumpable w/<6" solids.

Special Precautions: _____

Equipment: Full PPE

Attachment 4c



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MSDS for MICCROSHIELD

[Return to MICCROSHIELD Product Page](#)**Tolber**The Chemical Division of **Pyramid Plastics, Inc.****220 West 5th Street / Hope, Arkansas 71801****Information phone number: 870-777-5759****EMERGENCY PHONE NUMBER: 1-800-424-9300**

Print date 06/01/2004

SECTION 1**PRODUCT IDENTIFICATION**

PRODUCT NAME OR NUMBER	MICCROSHIELD
TRADE NAME OR CHEMICAL NAME	MICCROSHIELD
SYNONYMS	
FORMULA	
CHEMICAL FAMILY	
MOLECULAR WEIGHT	
N.F.P.A.	

SECTION 2**HAZARDOUS INGREDIENTS/HAZARD DATA**

Chemical Name/s	CAS Number	% Weight	TLV-TWA	PEL	Sec. 313
METHYL ETHYL KETONE	78-93-3	5-15	200 PPM	200 PPM	Yes
TOLUENE	108-88-3	40-50	100 PPM	100 PPM	Yes
PROPYLENE OXIDE	75-56-9	.1-1.0	100 PPM	100 PPM	Yes

*All components of this product are on the T.S.C.A. Inventory or are exempt from T.S.C.A. Inventory requirements***SECTION 3****PHYSICAL DATA**

BOILING / MELTING POINT @760 mm Hg	160F
PH	
VAPOR PRESSURE mm Hg @200	N.D.
VAPOR DENSITY (Air = 1)	2.9
PERCENT VOLATILE BY WEIGHT (%)	N.D.
SPECIFIC GRAVITY OR BULK DENSITY	0.95

SOLUBILITY IN WATER	NOT SOLUBLE
EVAPORATION RATE (BuAC=1)	3.5
APPEARANCE	REDDISH ORANGE LIQUID
ODOR	KETONE ODOR
INTENSITY	

SECTION 4**FIRE AND EXPLOSION HAZARD DATA**

FLASH POINT °F (Test Method)	30F . TCC
AUTOIGNITION TEMPERATURE	N.D.
FLAMMABILITY LIMITS IN AIR (%V)	LEL – 2% UEL – 10%
EXTINGUISHING MEDIA	CO2, DRY CHEMICAL
SPECIAL FIRE FIGHTING PROCEDURES	SELF-CONTAINED BREATHING APPARATUS AND PERSONAL PROTECTIVE EQUIPMENT.
UNUSUAL FIRE & EXPLOSION HAZARDS	MATERIAL IS HIGHLY VOLATILE. VAPORS ARE HEAVIER THAN AIR AND MAY TRAVEL ALONG THE GROUND TO AN IGNITION SOURCE.

SECTION 5**HEALTH HAZARD DATA / EFFECTS OF OVEREXPOSURE**

SKIN CONTACT	IRRITATION, DEFATTING, DERMATITIS POSSIBLE
EYE CONTACT	VAPORS MAY IRRITATE EYES. LIQUID AND MIST MAY SEVERELY IRRITATE OR DAMAGE THE EYES.
INHALATION	DIZZINESS, NAUSEA, HEADACHE, FATIGUE, WEAKNESS
INGESTION	IRRITATION, NAUSEA, VOMITING
CHRONIC EFFECTS OF OVEREXPOSURE	DIZZINESS, NAUSEA, SHORTNESS OF BREATH

SECTION 6**EMERGENCY AND FIRST AID PROCEDURES**

SKIN	FLUSH WITH PLENTY OF WATER
EYES	FLUSH WITH WATER. GET MEDICAL AID.
INGESTION	DO NOT INDUCE VOMITING. CONSULT A PHYSICIAN.
INHALATION	REMOVE TO FRESH AIR

SECTION 7

H.M.I.S. RATING

N.F.P.A. H.M.I.S. RATING:	HEALTH HAZARD	3
	FIRE HAZARD	3
	REACTIVITY	0
	PERSONAL PROTECTION	X (SECT. 9)

SECTION 8

REACTIVITY DATA

PRODUCT STABILITY	STABLE
<i>Conditions to avoid</i>	<i>Flame, sparks, and high heats</i>
CHEMICAL INCOMPATABILITY	STRONG OXIDIZING AGENTS
HAZARDOUS DECOMPOSITION	THERMAL DECOMPOSITION MAY LIBERATE
PRODUCTS	CARBON MONOXIDE AND CARBON DIOXIDE
HAZARDOUS POLYMERIZATION	WILL NOT OCCUR
<i>Conditions to avoid</i>	<i>None</i>
CORROSIVE TO METAL	NO
OXIDIZER	NO

SECTION 9

SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION	USE A NIOSH APPROVED RESPIRATOR
VENTILATION	LOCAL EXHAUST, MECHANICAL
PROTECTIVE CLOTHING	LONG SLEEVE SHIRT, TROUSERS, SAFETY SHOES, AND SOLVENT RESISTANT GLOVES
EYE PROTECTION	SPLASH GOGGLES
OTHER PRECAUTIONS	FLAMMABLE: STORE IN COOL, DRY AREA. KEEP CONTAINERS TIGHTLY CLOSED. WASH HANDS WITH SOAP AND WATER BEFORE HANDLING FOOD.

SECTION 10

ENVIRONMENTAL DATA

ENVIRONMENTAL TOXICITY DATA
SPILL OR LEAK PROCEDURES	REMOVE IGNITION SOURCES, SOAK UP WITH ABSORBENT MATERIAL
HAZARDOUS SUBSTANCE SUPERFUND
SPILL OR LEAK METHOD	DISPOSE OF IN ACCORDANCE WITH EPA, STATE, AND LOCAL REGULATIONS
HAZARDOUS WASTE 40CFR261
WASTE DISPOSAL METHOD	DISPOSE OF IN ACCORDANCE WITH EPA, STATE, AND LOCAL REGULATIONS

SECTION 11**SHIPPING DATA**

D.O.T. PROPER SHIPPING NAME	PAINT
HAZARDOUS SUBSTANCE	49CFR CERCLA
D.O.T. HAZARD CLASS	3, PACKING GROUP II
D.O.T. LABELS REQUIRED	FLAMMABLE
D.O.T. PLACARDS REQUIRED	FLAMMABLE
POISON CONSTITUENT	
BILL OF LADING DESCRIPTION	PAINT
CC NO.	
UN/NA CODE	UN 1263

While the **TOLBER DIVISION** believes the statements set forth herein are accurate as of the date hereof, the **TOLBER DIVISION** makes no warranty with respect thereto and expressly disclaims all liability for reliance thereon. Such data are offered solely for your consideration, investigation and verification.

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We accept:



Tolber Chemical
220 West 5th St. * Hope, Arkansas * 71801
Phone 870-777-3251 or Fax 870-777-8056

E-mail us at tolbermail@sbcglobal.net

STONE CHEMICAL COMPANY
1555 Naperville/Wheaton Rd, Suite 114
Naperville, Illinois 60563 USA
(630) 305-0538

MATERIAL SAFETY DATA SHEET

AN545L

ANODIZING SEAL

MANUFACTURED BY: STONE CHEMICAL COMPANY
1555 NAPERVILLE/WHEATON RD, SUITE 114
NAPERVILLE, ILLINOIS 60563
(630) 305-0538

EFFECTIVE DATE: JANUARY 1, 2001

CHEMICAL EMERGENCY: 1-800-535-5053 (INFOTRAC)

SECTION I - PRODUCT INFORMATION

TRADE NAME: STONE AN545L ANODIZING SEAL
CHEMICAL NAME
SYNONYMS: ANODIZING SEAL
CHEMICAL FAMILY: NICKEL ACETATE
D.O.T. IDENTIFICATION #: NOT D.O.T. REGULATED

SECTION II - HAZARDOUS INGREDIENTS

<u>INGREDIENT:</u>	<u>PERCENT:</u>
NICKEL ACETATE TETRAHYDRATE C.A.S. #373-02-4	<25%

SECTION III - PHYSICAL DATA

APPEARANCE: CLEAR GREEN LIQUID	SPECIFIC GRAVITY: 1.074 @ 25°C
ODOR: MILD ACETIC ODOR	PH: 5.3-5.8
BOILING POINT: 212 DEGREES F.	VAPOR PRESSURE: N/A
EVAPORATION RATE: N/A	VAPOR DENSITY (AIR=1): N/A
PERCENT VOLATILE BY VOLUME: N/A	SOLUBILITY IN WATER: 100%

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(630) 305-0538

MATERIAL SAFETY DATA SHEET
AN545L ANODIZING SEAL

SECTION IV - FIRE AND EXPLOSION DATA

FLASH POINT (METHOD USED): NONE

FLAMMABLE LIMITS **LEL:** N/A **UEL:** N/A

EXTINGUISHING MEDIA: FOR FIRES IN AREA USE APPROPRIATE MEDIA.
FOR EXAMPLE: WATER SPRAY, DRY CHEMICAL, CARBON DIOXIDE,
ALCOHOL FOAM.

SPECIAL FIRE FIGHTING PROCEDURES: WEAR PROTECTIVE CLOTHING
INCLUDING A NIOSH-APPROVED SELF-CONTAINED BREATHING APPARATUS.

UNUSUAL FIRE EXPLOSION HAZARDS: NONE

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: N/A

EFFECTS OF OVEREXPOSURE:

EYE CONTACT: CAUSES IRRITATION, POSSIBLY SEVERE.

SKIN CONTACT: MAY CAUSE IRRITATION, ESPECIALLY ON PROLONGED
CONTACT.

INHALATION: INHALATION CAUSES COUGHING AND IRRITATION OF NOSE,
THROAT, AND MUCOUS MEMBRANES.

INGESTION: MAY CAUSE NAUSEA AND VOMITING.

CHRONIC OVEREXPOSURE: MAY AGGRAVATE EXISTING SKIN, EYE, AND
LUNG CONDITIONS.

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MATERIAL SAFETY DATA SHEET
AN545L ANODIZING SEAL

SECTION VI - FIRST AID RECOMMENDATIONS

EYES: IMMEDIATELY FLUSH WITH PLENTY OF WATER FOR AT LEAST 15 MINUTES, HOLDING EYELIDS APART TO ENSURE FLUSHING OF ENTIRE SURFACE. WASHING WITHIN ONE MINUTE IS ESSENTIAL TO ACHIEVE MAXIMUM EFFECTIVENESS. SEEK MEDICAL ATTENTION.

SKIN: WASH THOROUGHLY WITH SOAP AND WATER, REMOVE CONTAMINATED CLOTHING AND FOOTWEAR. WASH CLOTHING BEFORE REUSE. GET MEDICAL ATTENTION IF IRRITATION SHOULD DEVELOP.

INGESTION: GIVE CONSCIOUS PERSON SEVERAL GLASSES OF WATER THEN INDUCE VOMITING BY TICKLING BACK OF THROAT WITH FINGER. KEEP AIRWAY CLEAR. GET MEDICAL ATTENTION. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

INHALATION: REMOVE TO FRESH AIR. IF NOT BREATHING, GIVE ARTIFICIAL RESPIRATION, PREFERABLY MOUTH-TO-MOUTH. IF BREATHING IS DIFFICULT, GIVE OXYGEN. SEEK MEDICAL ATTENTION.

SECTION VII - REACTIVITY DATA

STABILITY: X STABLE ___ UNSTABLE

CONDITIONS TO AVOID: NONE

INCOMPATIBLE MATERIALS: NONE

HAZARDOUS POLYMERIZATION: ___ WILL OCCUR X WILL NOT OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS: NONE

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MATERIAL SAFETY DATA SHEET
AN545L ANODIZING SEAL

SECTION VIII - SPILL OR LEAK PROCEDURES

SPILL OR LEAKAGE: MAINTAIN ADEQUATE VENTILATION. USE PROPER SAFETY EQUIPMENT. CONTAIN SPILL, PLACE INTO DRUMS FOR PROPER DISPOSAL OR REUSE. FLUSH REMAINING AREA WITH WATER TO REMOVE TRACE RESIDUE AND DISPOSE OF PROPERLY. AVOID DIRECT DISCHARGE TO SEWERS AND SURFACE WATERS.

WASTE DISPOSAL METHOD: OBSERVE ALL LOCAL, STATE, AND FEDERAL REGULATIONS. DISPOSE OF AT APPROVED LANDFILL SITE OR WASTE TREATMENT FACILITY. IF AUTHORIZED, NEUTRALIZE MATERIAL AND FLUSH TO APPROVED WASTE TREATMENT SYSTEM. DO NOT PRESSURIZE, CUT, WELD, BRAZE SOLDER, DRILL, GRIND OR EXPOSE EMPTY CONTAINERS TO HEAT, FLAME, SPARKS OR OTHER SOURCES OF IGNITION.

SECTION IX - PERSONAL PROTECTION

VENTILATION REQUIREMENTS: LOCAL EXHAUST VENTILATION

PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION: CHEMICAL SPLASH GOGGLES OR FACE SHIELD

SKIN PROTECTION: RUBBER OR PLASTIC GLOVES

RESPIRATORY PROTECTION: NIOSH/OSHA APPROVED RESPIRATOR IF NECESSARY. FOLLOW MANUFACTURER'S RECOMMENDATIONS

OTHER REQUIRED EQUIPMENT: EYEWASH STATION. SAFETY SHOWER. RUBBER APRON. CHEMICAL SAFETY SHOES. PROTECTIVE CLOTHING.

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MATERIAL SAFETY DATA SHEET
AN545L ANODIZING SEAL

SECTION X - SPECIAL PRECAUTIONS

PRECAUTIONARY STATEMENTS:

WARNING:

CAUSES IRRITATION.

AVOID CONTACT WITH EYES, SKIN, AND CLOTHING.

**WEAR CHEMICAL SPLASH GOGGLES, GLOVES AND PROTECTIVE CLOTHING
WHEN HANDLING.**

USE WITH ADEQUATE VENTILATION.

WASH THOROUGHLY AFTER HANDLING.

FOR INDUSTRIAL USE ONLY.

OTHER HANDLING AND STORAGE REQUIREMENTS:

STORE IN COOL DRY PLACE.

**STORE IN CLOSED CONTAINERS. DO NOT STORE IN UNLABELED OR
MISLABELED CONTAINERS.**

CHEMICAL EMERGENCY TELEPHONE (INFOTRAC): 1-800-535-5053

ALL INFORMATION, RECOMMENDATIONS, AND SUGGESTIONS APPEARING
HEREIN CONCERNING OUR PRODUCT ARE BASED UPON TESTS AND DATA
BELIEVED TO BE RELIABLE. HOWEVER, IT IS THE USER'S RESPONSIBILITY TO
DETERMINE THE SAFETY, TOXICITY, AND SUITABILITY FOR HIS OWN USE OF
THE PRODUCT DESCRIBED HEREIN. SINCE THE ACTUAL USE BY OTHERS IS
BEYOND OUR CONTROL, NO GUARANTEE, OR WARRANTY EXPRESSED OR
IMPLIED, IS MADE BY STONE CHEMICAL COMPANY AS TO THE EFFECTS OF
SUCH USE, THE RESULTS TO BE OBTAINED, OR THE SAFETY AND TOXICITY OF
THE PRODUCT, NOR DOES STONE CHEMICAL COMPANY ASSUME ANY
LIABILITY ARISING OUT OF USE, BY OTHERS, OF THE PRODUCT REFERRED TO
HEREIN. THE INFORMATION MAY BE NECESSARY OR DESIRABLE WHEN
PARTICULAR OR EXCEPTIONAL CONDITIONS OR CIRCUMSTANCES EXIST OR
BECAUSE OF APPLICABLE LAWS OR GOVERNMENT REGULATIONS.

STONE CHEMICAL COMPANY

1300 Iroquois Drive, Suite 135
Naperville, Illinois 60563 USA
(630) 305-0538

MATERIAL SAFETY DATA SHEET

AN590L**SEAL ADDITIVE****MANUFACTURED BY:**

STONE CHEMICAL COMPANY
1300 IROQUOIS DRIVE, SUITE 135
NAPERVILLE, ILLINOIS 60563
(630) 305-0538

EFFECTIVE DATE:**JANUARY 1, 2004****CHEMICAL EMERGENCY:****1-800-535-5053 (INFOTRAC)**

SECTION I - PRODUCT INFORMATION

TRADE NAME:**STONE AN590L SEAL ADDITIVE****CHEMICAL NAMES:****N/A****FORMULA:****PROPRIETARY****D.O.T. IDENTIFICATION #:****NOT D.O.T. REGULATED**

SECTION II - HAZARDOUS INGREDIENTS

INGREDIENT:**PERCENT****%TLV LEVEL****PEL LEVEL****NONE****N/A****N/A****N/A**

SECTION III - PHYSICAL DATA

APPEARANCE & ODOR: PALE YELLOW/BROWN LIQUID WITH MILD ODOR**SPECIFIC GRAVITY (H₂O = 1):** 1.13**VAPOR PRESSURE:** 17.8@20°C**BOILING POINT:** 212°F**pH:** 7.5 – 9.0**EVAPORATION RATE:** UNKNOWN**VAPOR DENSITY (AIR=1):** N/A**PERCENT VOLATILE BY VOLUME:** 62%**SOLUBILITY IN WATER:** 100%

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(630) 305-0538

**MATERIAL SAFETY DATA SHEET
AN590L SEAL ADDITIVE**

SECTION IV - FIRE AND EXPLOSION DATA

FLASH POINT (METHOD USED): NON-FLAMMABLE WATER SOLUTION

FLAMMABLE LIMITS **LEL:** N/A **UEL:** N/A

EXTINGUISHING MEDIA: THE ORGANIC PORTION MAY BURN ONCE THE WATER IS EVAPORATED. IN SUCH CASE, USE WATER SPRAY (FOG), ALCOHOL-TYPE, FOAM FOR LARGE FIRES. CO₂ OR DRY CHEMICALS FOR SMALL FIRES.

SPECIAL FIRE FIGHTING PROCEDURES: WEAR POSITIVE PRESSURE SELF CONTAINED BREATHING APPARATUS. DO NOT SPRAY A SOLID STREAM OF WATER OR FOAM ON HOT BURNING LIQUID, MAY CAUSE FROTHING.

UNUSUAL FIRE EXPLOSION HAZARDS: NONE

SECTION V - HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE: NOT ESTABLISHED (OSHA 29 CFR 1910.Z-1-A)
NOT ESTABLISHED (ASGIH 1996)

EFFECTS OF OVEREXPOSURE:

EMERGENCY OVERVIEW: AN590L MAY CAUSE SKIN IRRITATION AND PERMANENT EYE INJURY. MAY CAUSE NAUSEA, DIARRHEA, AND VOMITING IF INGESTED. BREATHING THE MIST OR VAPORS MAY CAUSE CHEST DISCOMFORT, COUGHING AND IRRITATION TO THE UPPER RESPIRATORY TRACT.

EYE CONTACT: CONTACT WITH THE EYES MAY CAUSE MODERATE IRRITATION. MAY CAUSE MODERATE CORNEAL INJURY WHICH MAY RESULT IN PERMANENT IMPAIRMENT OF VISION, EVEN BLINDNESS. VAPORS OR AEROSOL MIST MAY IRRITATE THE EYES.

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MATERIAL SAFETY DATA SHEET AN590L SEAL ADDITIVE

SKIN CONTACT: CONTACT WITH THE SKIN WILL CAUSE A GRADUAL BURNING FEELING RESULTING IN IRRITATION, REDDENING AND POSSIBLE CHEMICAL BURNS. PROLONGED AND REPEATED CONTACT WILL CAUSE DEOILING OF THE SKIN INFLAMMATION, RASHES OR DERMATITIS. MATERIAL MAY CAUSE CHEMICAL BURNS IF NOT REMOVED IMMEDIATELY.

INGESTION: SWALLOWING SMALL AMOUNTS OF MATERIAL INCIDENTAL TO NORMAL HANDLING OPERATIONS ARE NOT LIKELY TO CAUSE INJURY. SWALLOWING LARGE AMOUNTS MAY CAUSE A BURNING FEELING RESULTING IN IRRITATION, REDDING AND POSSIBLE CHEMICAL BURNS TO THE MOUTH, THROAT, AND MUCOUS MEMBRANE. MATERIAL MAY CAUSE SICKNESS AND UPSET STOMACH.

INHALATION: EXCESSIVE EXPOSURE MAY CAUSE SICKNESS, SNEEZING, OR IRRITATION TO THE NOSE, THROAT, AND LUNGS.

CHRONIC INFORMATION: MATERIAL IS NON-CARCINOGENIC. EXCESSIVE EXPOSURE MAY CAUSE LIVER AND KIDNEY EFFECTS.

SECTION VI - FIRST AID RECOMMENDATIONS

EYES: WASH EYES IMMEDIATELY WITH RUNNING WATER, INCLUDING UNDER THE EYELIDS FOR 30 MINUTES. CALL A PHYSICIAN, PREFERABLY AN OPHTHALMOLOGIST.

SKIN: WASH AREA WITH RUNNING WATER FOR 5 TO 10 MINUTES. CONTAMINATED CLOTHING SHOULD BE WASHED BEFORE REUSE.

INGESTION (SWALLOWING): GIVE SEVERAL GLASSES OF WATER. INDUCE VOMITING ONLY IF LARGE AMOUNT IS SWALLOWED. CALL A PHYSICIAN.

INHALATION (BREATHING): MOVE AWAY FROM VAPORS TO FRESH AIR SOURCE. REST UNTIL NORMAL BREATHING IS RESTORED. IF BREATHING HAS STOPPED, ADMINISTER ARTIFICIAL RESPIRATION AND OXYGEN. **SEEK MEDICAL ASSISTANCE.**

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**MATERIAL SAFETY DATA SHEET
AN59OL SEAL ADDITIVE**

SKIN CONTACT: WASH AREA WITH RUNNING WATER FOR 5 TO 10 MINUTES.
CONTAMINATED CLOTHING SHOULD BE WASHED BEFORE REUSE.

NOTES TO PHYSICIAN: THERE IS NO SPECIFIC ANTIDOTE. TREATMENT OF
OVEREXPOSURE SHOULD BE DIRECTED AT THE CONTROL OF
SYMPTOMS AND THE CLINICAL CONDITION OF THE PATIENT. DUE TO
THE IRRITANT AND SURFACTANT ACTION OF THE MATERIAL, IF IT IS
ASPIRATED DURING SWALLOWING OR VOMITING, THERE MAY BE LUNG
INJURY. THEREFORE, EMESIS SHOULD NOT BE INDUCED BY
MECHANICAL OR PHARMACOLOGICAL MEANS. IF IT IS CONSIDERED
THAT EVACUATION OF THE STOMACH CONTENTS IS NECESSARY, THIS
SHOULD BE DONE BY MEANS LEAST LIKELY TO RESULT IN ASPIRATION
(E.G THE USE OF GASTRIC LAVAGE IN THE PRESENCE OF
ENDOTRACHEAL INTUBATION).

SECTION VII - REACTIVITY DATA

STABILITY: X STABLE UNSTABLE

CONDITIONS TO AVOID: N/A

INCOMPATIBLE MATERIALS: ALKALIS

HAZARDOUS POLYMERIZATION: WILL OCCUR X WILL NOT OCCUR

HAZARDOUS DECOMPOSITION PRODUCTS: NONE

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MATERIAL SAFETY DATA SHEET AN590L SEAL ADDITIVE

SECTION VIII - NFPA LABEL INFORMATION

	<u>NFPA</u>	<u>KEY</u>
HEALTH:	1	0 - MINIMAL
FLAMMABILITY:	0	1 - SLIGHT
REACTIVITY:	0	2 - MODERATE
		3 - SERIOUS
		4 - SEVERE

PERSONAL PROTECTION RATING TO BE SUPPLIED BY USER DEPENDING ON USE CONDITIONS.

HMIS = HAZARDOUS MATERIALS IDENTIFICATION SYSTEM

NFPA = NATIONAL FIRE PROTECTION ASSOCIATION 704

HEALTH, FLAMMABILITY, AND REACTIVITY RATINGS SHOULD ONLY BE USED AS A GUIDE. THE MATERIAL SAFETY DATA SHEET FOR THE PRODUCT SHOULD BE CONSULTED WHEN ASSESSING HAZARD INFORMATION.

SECTION IX - SPILL OR LEAK PROCEDURES

SPILL OR LEAKAGE: RECOVER ALL MATERIAL PRACTICAL FOR USE. SOAK UP BALANCE WITH SAND, DIRT, OR OTHER ABSORBENT AND HAUL TO AN APPROVED LANDFILL. WASH RESIDUE TO INDUSTRIAL WASTE TREATMENT WITH WATER. AVOID DIRECT DISCHARGE TO NATURAL WATERWAYS OR PUBLIC WATER SUPPLIES, HIGHLY TOXIC TO FISH.

WASTE DISPOSAL METHOD: PRODUCT IS NOT READILY BIODEGRADABLE IN WASTEWATER TREATMENT SYSTEMS AND IS HIGHLY TOXIC TO AQUATIC LIFE. PREFERRED METHOD OF DISPOSAL IS INCINERATION. OBSERVE ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

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**MATERIAL SAFETY DATA SHEET
AN590L SEAL ADDITIVE**

SECTION X - PERSONAL PROTECTION

VENTILATION REQUIREMENTS: GENERAL MECHANICAL VENTILATION IF USED OR PROCESSED IN CONFINED AREAS.

PERSONAL PROTECTIVE EQUIPMENT:

EYE PROTECTION: FULL FACE-SHIELD, EYE FOUNTAIN AND SAFETY SHOWER NEAR WORK AREA.

SKIN PROTECTION: CHEMICAL RESISTANT GLOVES, LONG SLEEVED SHIRT, LONG TROUSERS, CHEMICAL RESISTANT BOOTS.

RESPIRATORY PROTECTION: AVOID BREATHING VAPORS AS THEY ARE IRRITATING. IF MISTS ARE PRESENT, USE A NIOSH APPROVED DUST/MIST RESPIRATOR.

OTHER REQUIRED EQUIPMENT: NONE

SECTION XI - SPECIAL PRECAUTIONS

PRECAUTIONARY STATEMENTS: MATERIAL IS SLIPPERY ON WET OR HARD SURFACES.

FOR INDUSTRIAL USE ONLY. KEEP OUT OF REACH OF CHILDREN.

OTHER HANDLING AND STORAGE REQUIREMENTS: KEEP CONTAINER CLOSED WHEN NOT IN USE. MAINTAIN PRODUCT AT 38°F OR HIGHER. PROTECT FROM LOW TEMPERATURES.

CHEMICAL EMERGENCY TELEPHONE (INFOTRAC): 1-800-535-5053

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(630) 305-0538

**MATERIAL SAFETY DATA SHEET
AN59OL SEAL ADDITIVE**

ALL INFORMATION, RECOMMENDATIONS, AND SUGGESTIONS APPEARING HEREIN CONCERNING OUR PRODUCT ARE BASED UPON TESTS AND DATA BELIEVED TO BE RELIABLE. HOWEVER, IT IS THE USER'S RESPONSIBILITY TO DETERMINE THE SAFETY, TOXICITY, AND SUITABILITY FOR HIS OWN USE OF THE PRODUCT DESCRIBED HEREIN. SINCE THE ACTUAL USE BY OTHERS IS BEYOND OUR CONTROL, NO GUARANTEE, OR WARRANTY EXPRESSED OR IMPLIED, IS MADE BY STONE CHEMICAL COMPANY AS TO THE EFFECTS OF SUCH USE, THE RESULTS TO BE OBTAINED, OR THE SAFETY AND TOXICITY OF THE PRODUCT, NOR DOES STONE CHEMICAL COMPANY ASSUME ANY LIABILITY ARISING OUT OF USE, BY OTHERS, OF THE PRODUCT REFERRED TO HEREIN. THE INFORMATION MAY BE NECESSARY OR DESIRABLE WHEN PARTICULAR OR EXCEPTIONAL CONDITIONS OR CIRCUMSTANCES EXIST OR BECAUSE OF APPLICABLE LAWS OR GOVERNMENT REGULATIONS.

MATERIAL SAFETY DATA SHEET

PETROFERM INC.

2416 Lynndale Road
Fernandina Beach, Florida 32034
(904) 261-8286
www.petroferm.com

CHEMTREC 24-HOUR EMERGENCY RESPONSE
TOLL FREE NUMBER: (800) 424-9300

INTERNATIONAL CALLS: COLLECT (703) 527-3887

CHEMTREC should only be contacted in the event of chemical emergencies involving a spill, leak, fire, exposure, or accident involving chemicals

1. PRODUCT NAME
LENIUM® ES
2. COMPOSITION AND INFORMATION ON INGREDIENTS

	CAS Number	Weight %	OSHA PEL	ACGIH TLV
n-Propyl bromide	106-94-5	80 -90	25 ppm**	Not est.
1,2 Epoxybutane	106-88-7	< 1	Not est.	Not est.
2-Methyl-2-propanol	75-65-0	< 2	100 ppm	100 ppm
Dimethoxymethane	109-87-5	< 2	1000 ppm	1000 ppm
2-Propanol	67-63-0	5 - 10	400 ppm	400 ppm

**Source of Exposure Limit Data: Manufacturer's TWA

3. HAZARDS IDENTIFICATION
SYMPTOMS/EFFECTS OF OVEREXPOSURE

Inhalation: May irritate the nose, throat, and lungs. Exposure to high doses may cause central nervous system depression (anesthetic-like effects). Doses which cause anesthetic-like effects may also cause adverse effects in liver, lung, and kidney.

Ingestion: Low order of toxicity. May cause mild nausea and abdominal discomfort

Skin: Prolonged exposure will cause a skin irritation.

Eyes: Contact with eyes may cause mild irritation.

Listed Carcinogens: None

4. FIRST AID MEASURES

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Consult a physician.

Ingestion: Do not induce vomiting. Seek medical attention.

Skin: Remove contaminated clothing. Thoroughly wash affected area with soap water; use skin cream if irritation is severe.

Eyes: Immediately flush eyes with water for 15 minutes. Call a physician if irritation persists.

5. FIRE FIGHTING MEASURES

Extinguishing Media: Dry chemical, chemical foam, carbon dioxide. Class BC, ABC fire extinguisher.

Special Fire Fighting Procedures: Wear a self-contained breathing apparatus and personal protective equipment to avoid skin and eyes contact in fire situations.

Unusual Fire and Explosions Hazard: In fires, toxic and corrosive gases may be released.

6. ACCIDENTAL RELEASE MEASURES

Absorb spill with inert material, then place in chemical waste container. Clean up residue with an appropriate organic solvent. For large spills, dike for later disposal. Observe government regulations.

7. HANDLING AND STORAGE

Store in original container, preferably in a cool ventilated, fire-resistant building. Avoid overheating or freezing. Avoid open flames and sparks. Since empty containers may retain product residues (vapor, liquid, or solid) all label precautions must be observed.

8. EXPOSURE CONTROLS – PERSONAL PROTECTION

Respiratory: Use NIOSH/MSHA approved respirator if ventilation is not sufficient and if mists are generated.
Ventilation: If desirable to reduce odor, local exhaust can also be effective in minimizing odor. Provide sufficient ventilation to maintain emissions below recommended exposure limits.
Clothing/Glove: Chemically resistant gloves should be used with all industrial chemicals.
Eye Protection: Safety glasses/goggles are recommended. Provide eye bath near work site.

9. PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point (760 mm Hg):	154°F (68°C)	Vapor Density (Air = 1):	>1
% Volatile (By weight):	100	Evaporation Rate (BUAC = 1):	< 1
Specific Gravity (H₂O = 1):	1.25 @ 77°F (25°C)	Solubility in Water:	Negligible
Vapor Pressure (20°C):	> 100 mm Hg	Appearance and Odor:	Clear colorless liquid with a strong characteristic odor.
Flash Point:	None (ASTM D93-85, Pensky-Martens Closed Cup)	Flammable Limits (% By Volume in Air):	Not determined

10. STABILITY AND REACTIVITY

Stability: LENIUM ES is stable.

Conditions to Avoid: Storage temperatures above the boiling point (150°F). Operating temperatures above 185°F and decomposition temperatures above 400°F.

Incompatibility: Strong mineral acids and strong oxidizing agents. Prolonged contact with aluminum, magnesium, and zinc metals should be avoided.

Hazardous Decomposition: Thermal decomposition produces carbon monoxide, carbon dioxide, and hydrogen halides.

Hazardous Polymerization: Will not occur

11. TOXICOLOGICAL INFORMATION

n-Propyl bromide

LD50/oral/rat = 4,260 mg/kg

LC50/rat = 253,000 mg/m³/0.5 hour

2-Propanol

LD50/oral/rat = 5,500 mg/kg

LD50/dermal/rabbit = 12,900 mg/kg

LC50/rat = 19,000 ppm (female); 22,500 ppm (male)

2-Methyl-2-propanol

LD50/oral/rat = 3,500 mg/kg

11. TOXICOLOGICAL INFORMATION CONTINUED

Dimethoxymethane

LC50/rat = 15,000 ppm

1,2 epoxybutane

LD50/oral/rat = 500 mg/kg

LD50/dermal/ rabbit = 2,100 ul/kg

12. ECOLOGICAL INFORMATION

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treat or incinerate used material in compliance with all applicable government regulations.

14. TRANSPORT INFORMATION

Non-regulated.

15. REGULATORY INFORMATION

The product contains 1,2 epoxybutane and 2-methyl-2-propanol which are subject to the reporting requirements of SARA Title III, Section 313. No other components of LENIUM ES appears on any of the EPA's lists of toxic or hazardous substances.

None of the components of this product is listed in California's Safe Drinking Water and Toxic Enforcement Act of 1986 – Proposition 65 as a chemical known to cause cancer, birth defects or other reproductive harm.

All the components of this product are listed on the TSCA inventory.

16. OTHER INFORMATION

NFPA Codes: Health: 1 Fire: 0 Reactivity: 0

We believe that the information contained herein is current as of the date of this Material Safety Data Sheet. Since the use of this information and of these opinions and the conditions of use of the product are not within the control of Petroferm Inc., it is the user's obligation to determine the conditions of safe use of the product.

ENVIRO-CHEM
LABORATORIES, INC.

100 Lakefront Drive, Hunt Valley, Maryland 21030

(410) 785-9739

FINAL REPORT OF ANALYSES

Eastern Plating Company
1200 South Baylis Street
Baltimore, MD 21224-
Attn Mr. Michael Caster

PROJECT NAME:
REPORT DATE: 31-Jan-08

LAB#- ECL015089-006 SAMPLE ID- Nickel Sludge SAMPLE MATRIX- solid
DATE SAMPLED- 1/4/2008 TIME SAMPLED-
SAMPLER- A. Amasia SAMPLE SITE-
DATE RECEIVED- 1/7/2008 TIME RECEIVED- 12:30 RECEIVED BY-CHK

Page 6 of 12

ANALYSIS	METHOD	ANALYSIS DATE	BY	RESULT	UNITS	DET. LIMIT
TCLP Extraction	EPA 1311	01/07/08	AAA			
Arsenic in TCLP Extract	EPA 6010	01/15/08	CHK	< 0.050	mg/L	0.050
Barium in TCLP Extract	EPA 6010	01/15/08	CHK	0.069	mg/L	0.020
Cadmium in TCLP Extract	EPA 6010	01/15/08	CHK	< 0.005	mg/L	0.005
Chromium in TCLP Extrac	EPA 6010	01/15/08	CHK	0.249	mg/L	0.010
Lead in TCLP Extract	EPA 6010	01/15/08	CHK	< 0.050	mg/L	0.050
Mercury in TCLP Extract	EPA 7470	01/08/08	CHK	< 0.001	mg/L	0.001
Selenium in TCLP Extrac	EPA 6010	01/15/08	CHK	< 0.050	mg/L	0.050
Silver in TCLP Extract	EPA 6010	01/17/08	CHK	< 0.010	mg/L	0.010

Additional Response # 5

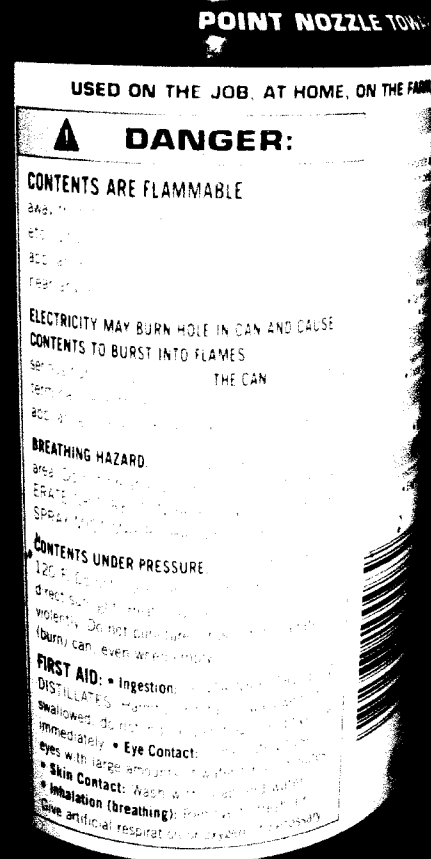
- a. All aerosol cans disposed at Eastern Plating have been disposed in the municipal trash. Our maintenance operators are the only personnel using aerosol cans. They reported approximately 15-16 empty aerosol have been thrown in the trash over the past two years. These cans had contained spray paint.
- b. Attachments 5a and 5b contain photos of the aerosol cans used in Baylis and Pulaski facilities. There are photos of the front and back labels of each can. Disposal instructions have been highlighted where printed on the label.

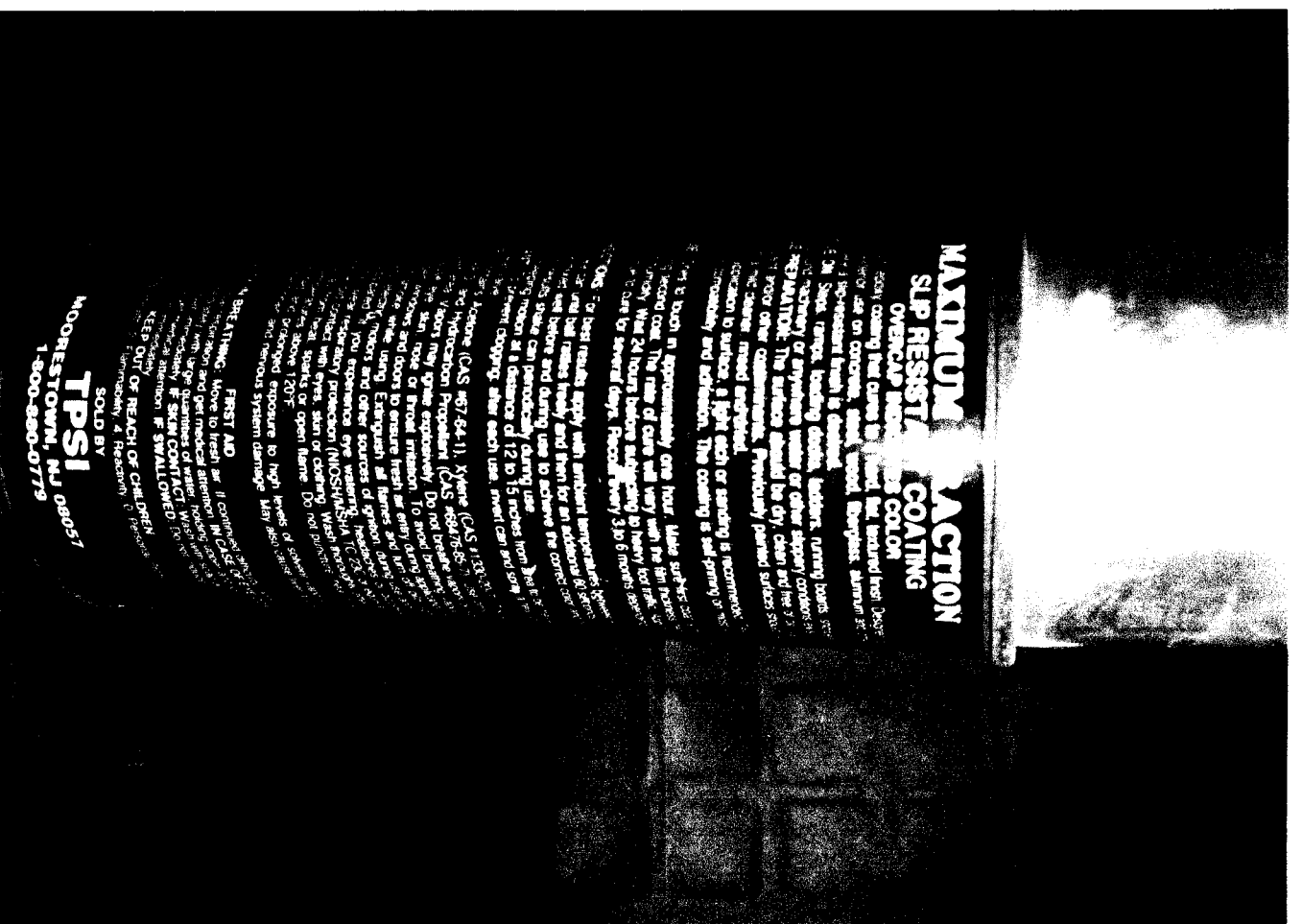
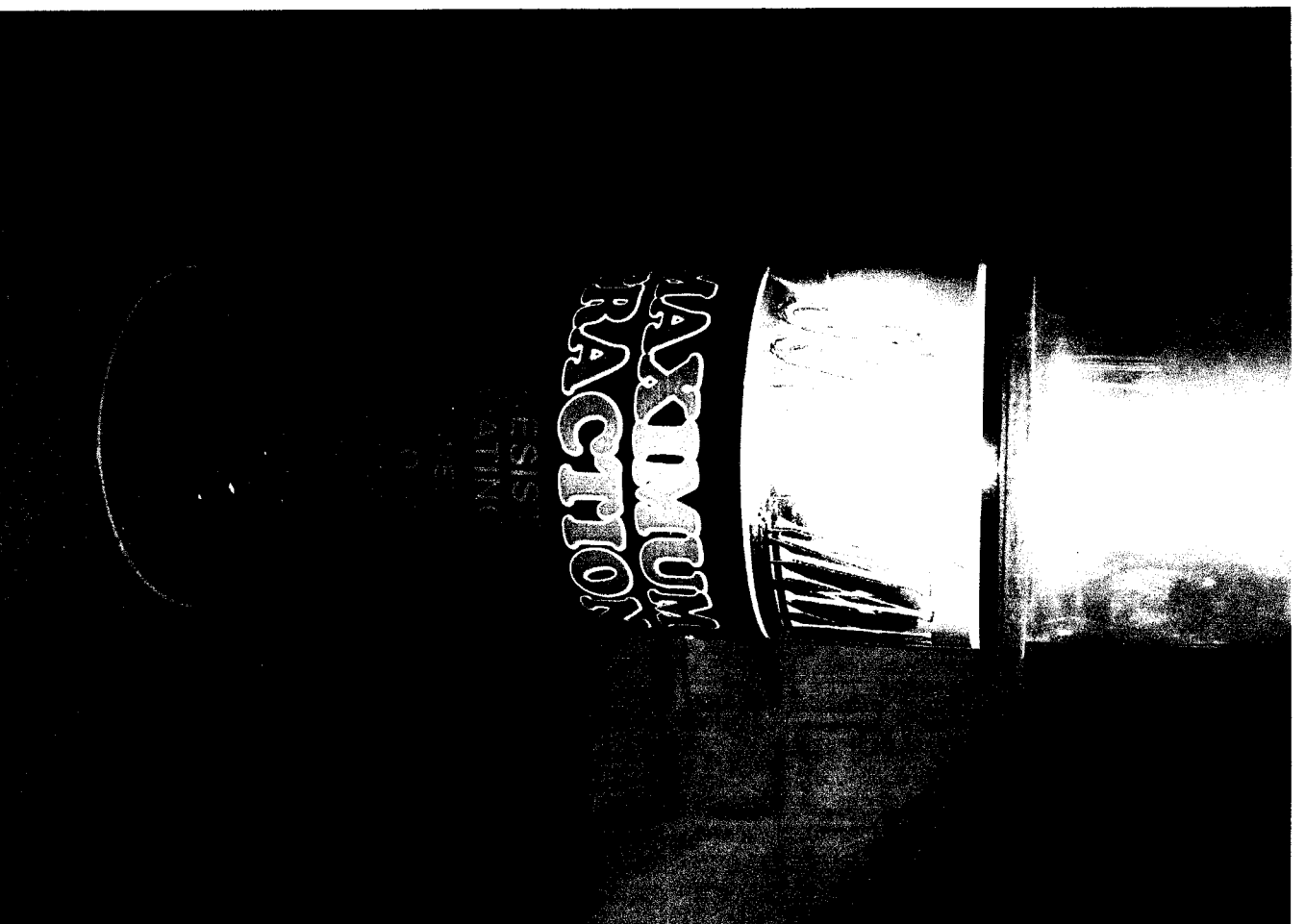
Note there are several contradictions between this response and Response 8a to the February 4, 2008 report. These include:

- We had stated the cans were used strictly for lubrication.
 - 5a above states the cans were used for painting
- We had stated there were a total of 11 cans used.
 - The photos show 15 cans from Baylis and 4 cans from Pulaski
- There are photos of two aerosol cans from Baylis which were not reported in Response 8 to the February 4, 2008 report. These are Krylon Interior-Exterior and Time Mist air freshener.
- We had stated 1-2 cans used per year at our facility.
 - 5a above stated 15-16 over two years.

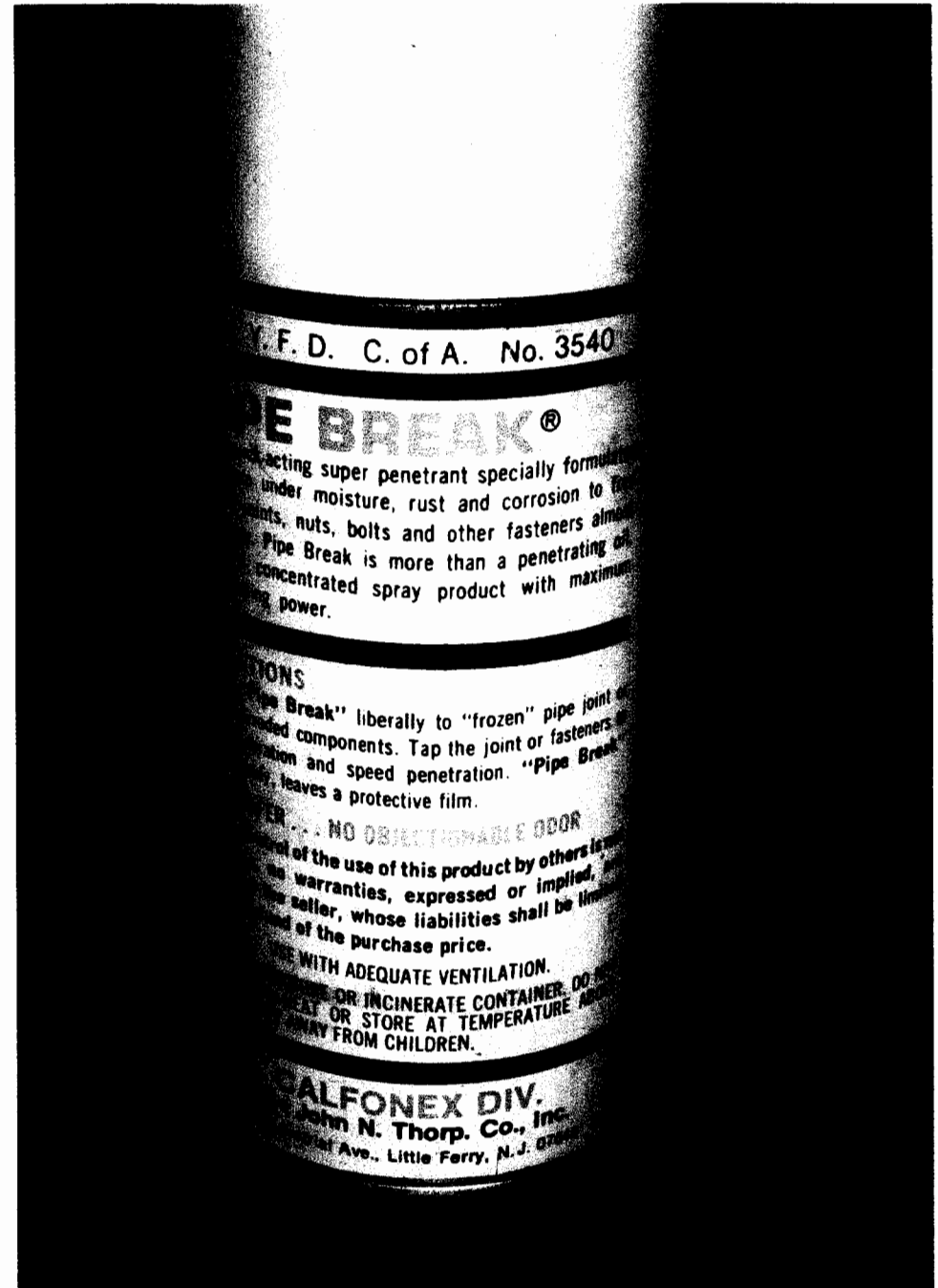
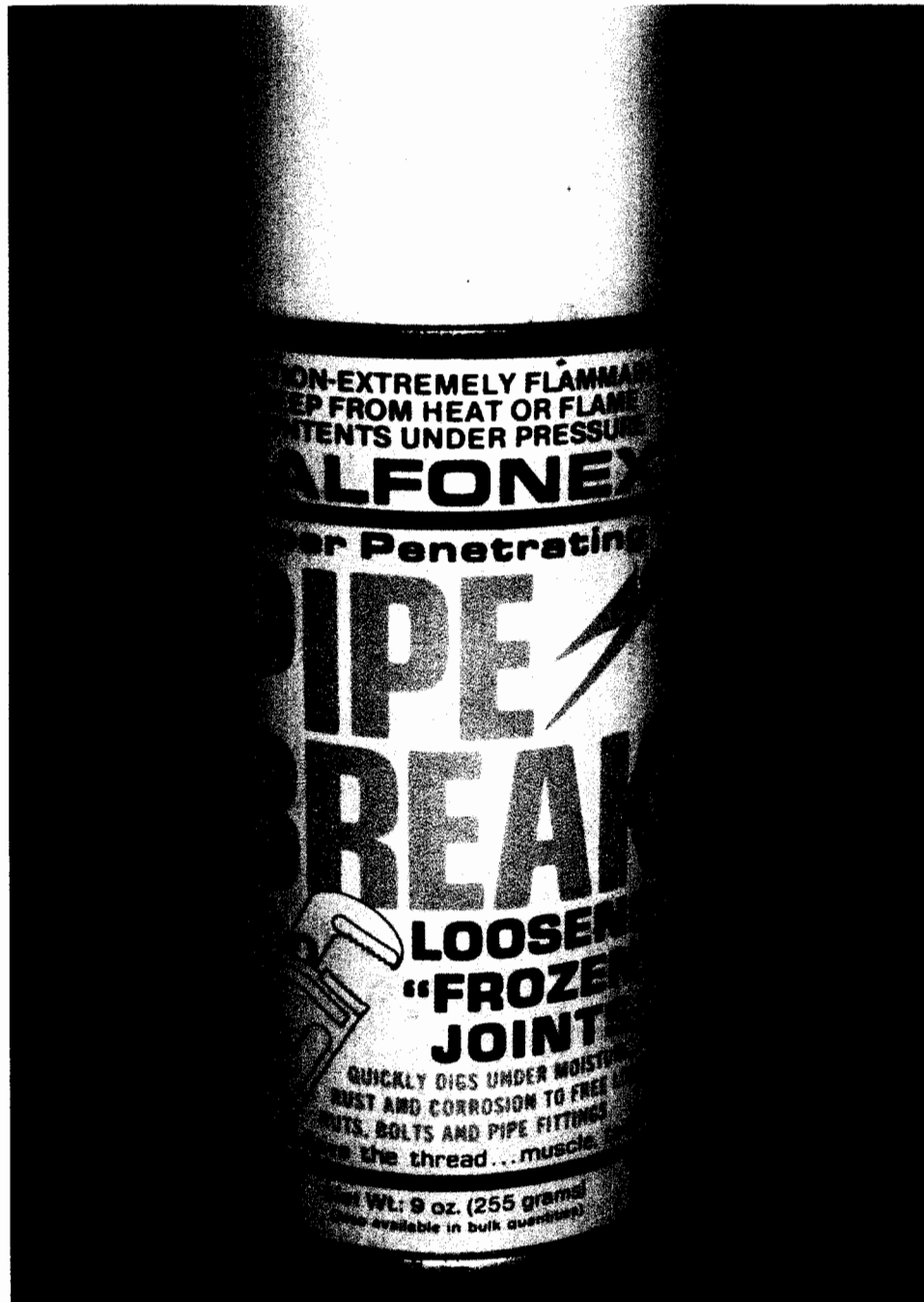
In the Response 8 to the February 4, 2008 report, the response was prepared for me. I did not validate the accuracy of the response.

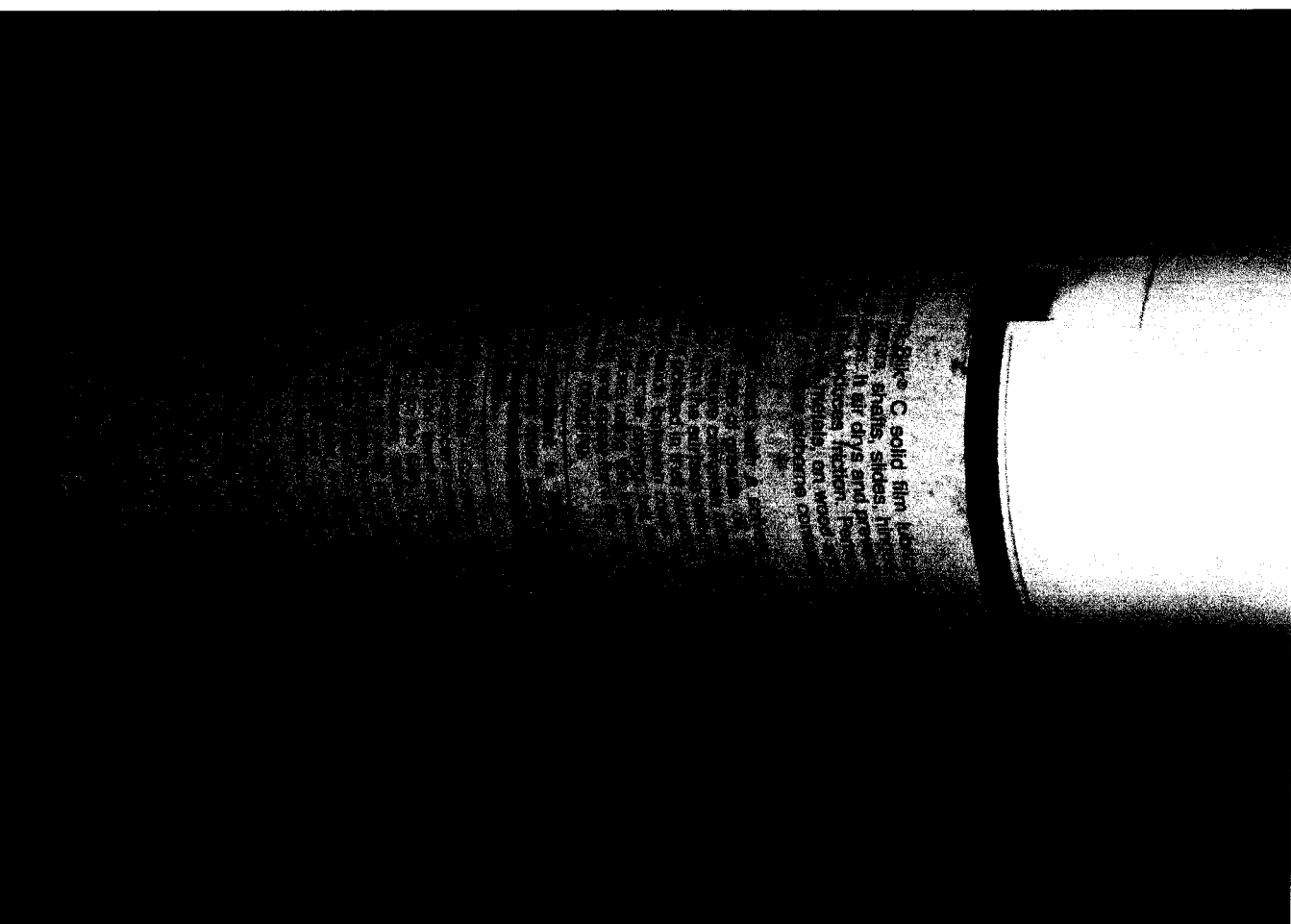
For this response, I questioned our maintenance operators directly, had them collect all the cans and take the photos. I validated the inventory by walking through the facilities and inspecting for cans.

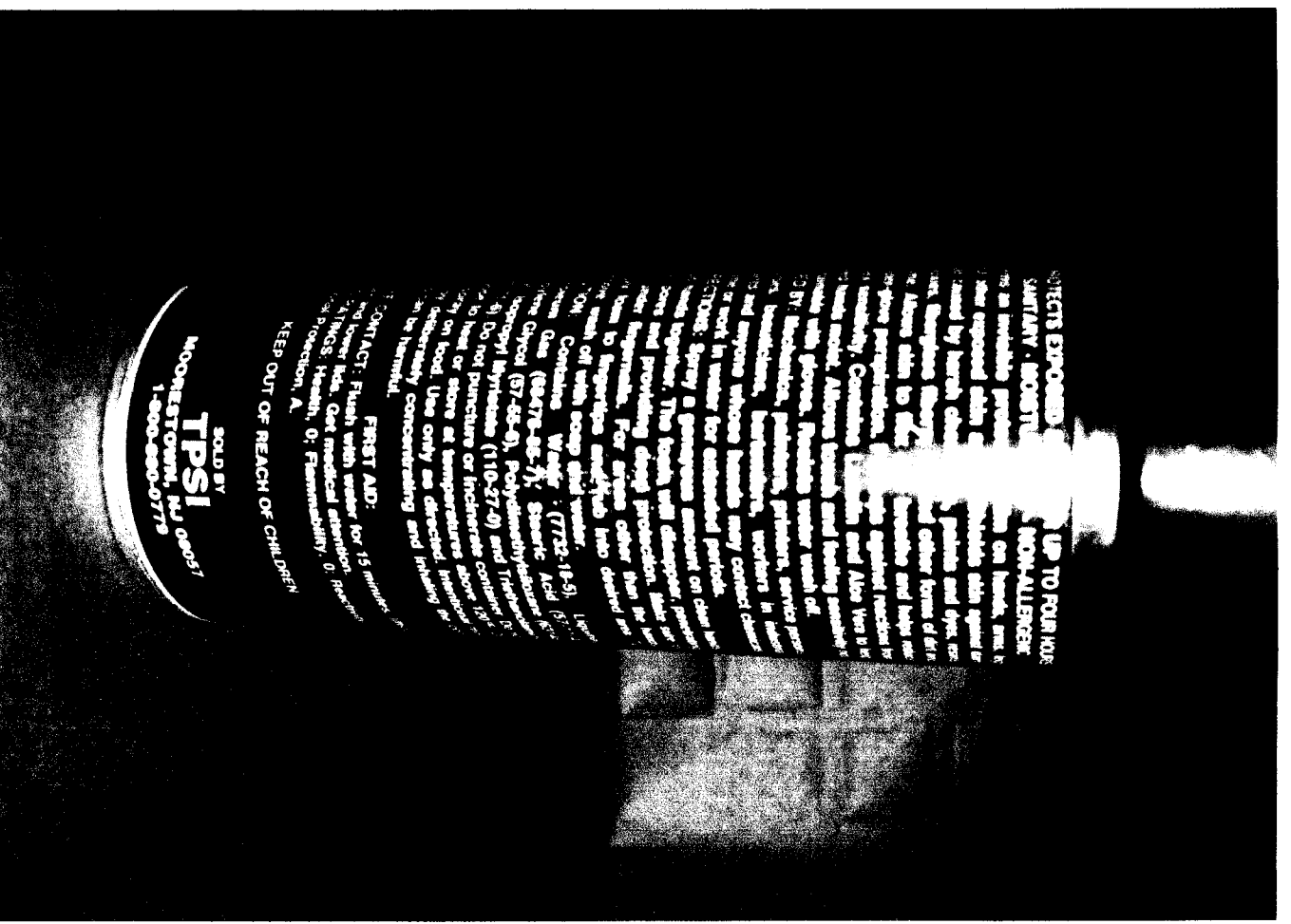
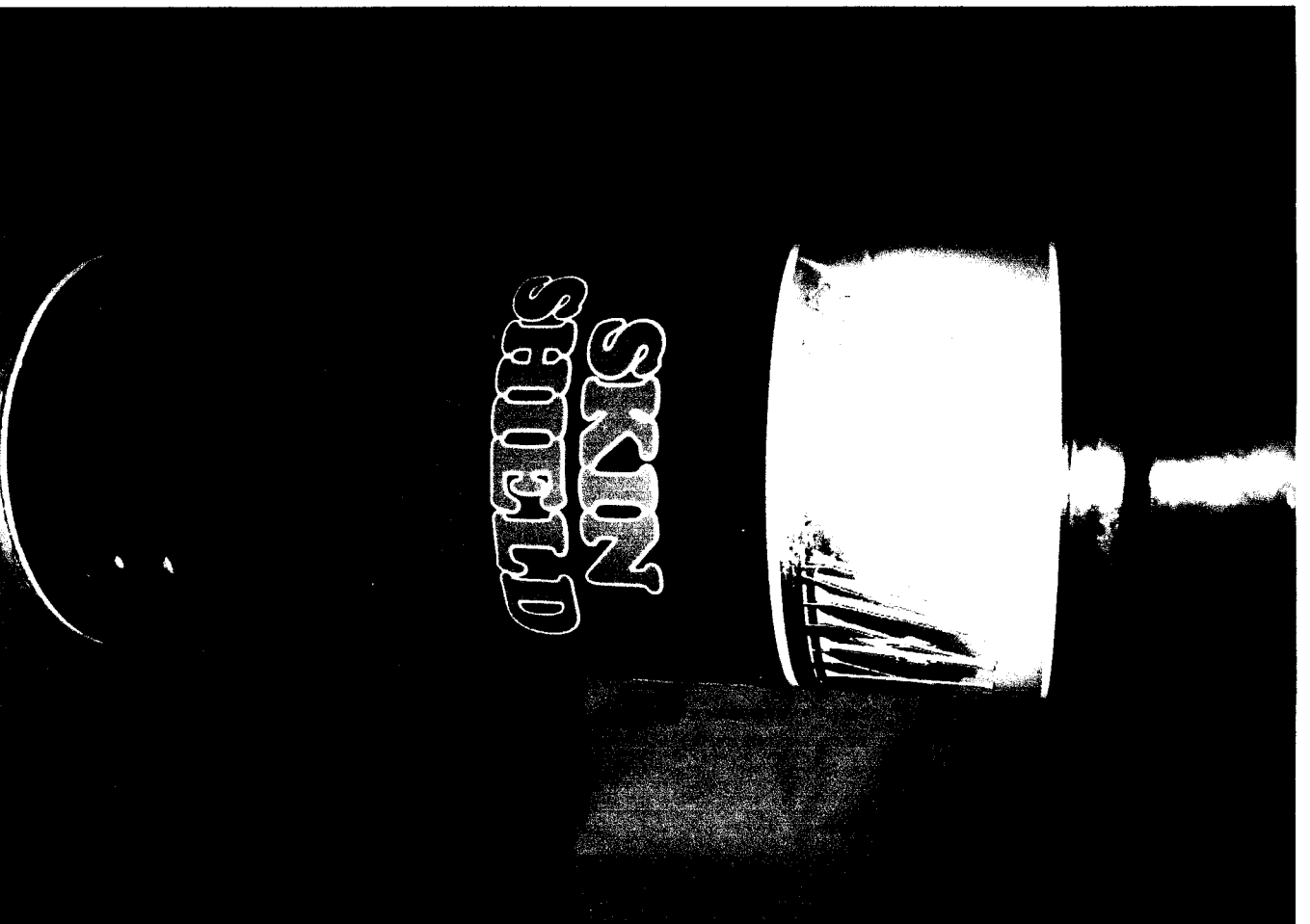


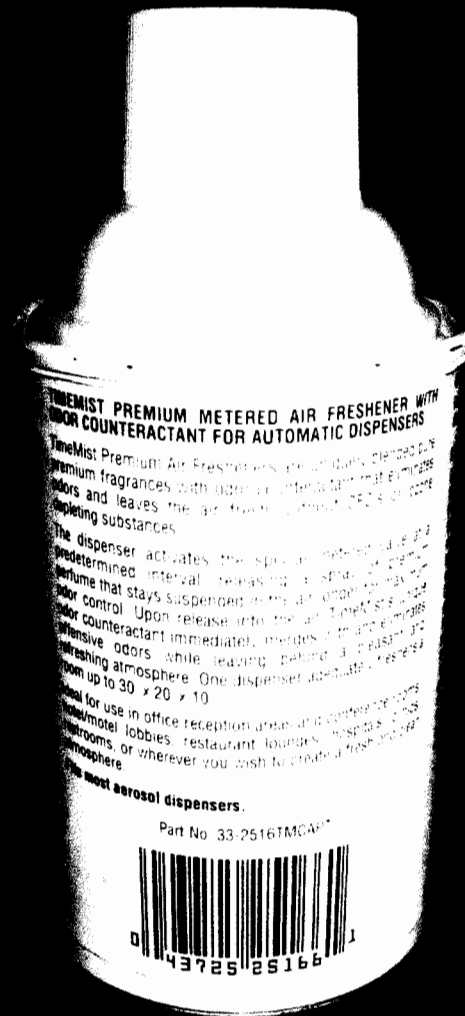








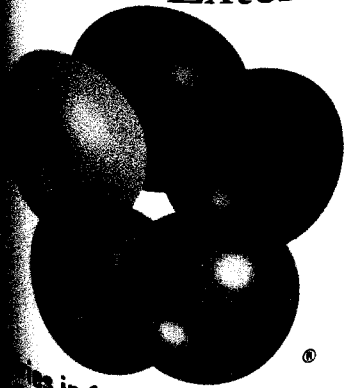




No Drips, No Errors!

KRYLON

Interior-Exterior



Paints in 12 Minutes or Less
SMOOTHEST FINISH

For Use Inside And Out On
Wood, Metal, Glass, Wicker and More

PELIGRO! EXTREMADAMENTE INFLAMABLE - LOS
VAPORES PUEDEN CAUSAR FUEGOS RELAMPAGOS O
EXPLOSIONES. A PRESION, VAPORES NOCIVOS. EVITE LAS VÍAS
RESPIRATORIAS. Antes de usarlo, leer cuidadosamente
PRECAUCIONES en la parte posterior de la etiqueta.

NET WT. 12 OZ (340 g)

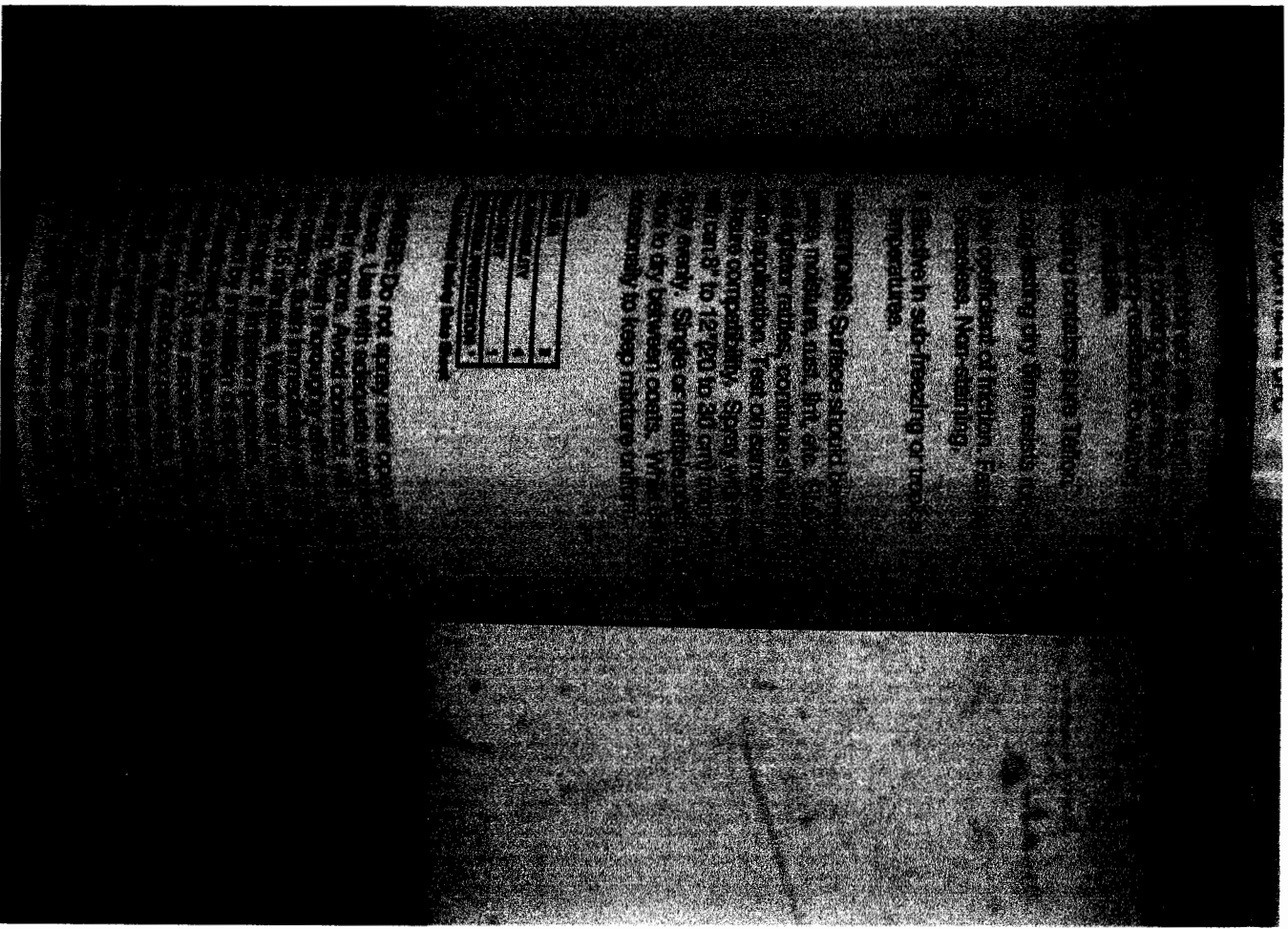
CONTAINS KETONES, HYDROCARBON PROPELLANTS, XYLENE, ACETONE,
TOLUENE AND TOLUENE. DANGER! EXTREMELY FLAMMABLE. Keep away from heat, sparks,
open flame. Vapors will accumulate readily and may ignite explosively. Keep area ventilated during
and after use. Vapors are gone. DO NOT SMOKE. Extinguish all flames, pilot lights and heaters.
Stoves, electric tools and appliances, and any other sources of ignition. CONTENTS UNDER
PRESSURE. Avoid prolonged exposure to sunlight or heat from radiators, stoves, hot water and other
sources that may cause bursting. Do not puncture, incinerate, burn or store above 120°F. Use with
in a cool, dry place. Do not discard empty can in trash compactator. VAPOR HARMFUL. Use with
caution. Avoid continuous breathing of vapor and spray mist. To avoid creating vapors
open windows and doors or use other means to ensure fresh air entry during application.
If you experience eye watering, headaches or dizziness, increase fresh air or use
eye protection (NIOSH approved) or leave the area. Avoid contact with eyes and skin. If contact
occurs, get medical attention. For skin contact, wash thoroughly with soap and water. If contact
occurs with difficulty, provide fresh air and call physician. DELAYED EFFECTS FROM LONG TERM
USE. Contains solvents which can cause permanent brain and nervous system damage
by deliberately concentrating and inhaling the contents may be harmful and fatal.
This product contains chemicals known to the State of California to cause cancer and birth
defects or reproductive harm. DO NOT TAKE INTERNALLY. KEEP OUT OF THE REACH OF CHILDREN.

**CONTIENE QUETONA, IMPELENTES DE HIDROCARBURO, XILENO, ACETONA,
TOLUENO Y TOLUENO. PELIGRO! EXTREMADAMENTE INFLAMABLE.** Manténgalo alejado del calor,
fuego y chispas. Los vapores se acumulan rápidamente y pueden encenderse y explotar. Durante su uso
mantenga la zona bien ventilada. Los vapores desaparecen. NO FUMAR. Apague todos los fuegos
de encendido y calentadores. Apague las cocinas, las herramientas y los aparatos eléctricos.
Evite la exposición prolongada a la luz solar o al calor de radiadores, estufas, agua caliente o cualquier otra fuente de calor.
No perforar, quemar, incinerar o almacenar los envases a una temperatura mayor de 120°F.
Usar en un lugar fresco. No almacenar los envases en un lugar caliente. Evite el contacto con los ojos y la piel.
Lávese las manos después de usarlo. Evite el contacto con la piel. Si hubo contacto con la piel, lávese bien la parte afectada con agua y jabón. Si
hubo contacto con los ojos, láveselos durante 15 minutos usando mucho agua.
Respiración: respire aire puro y llame a un médico. EFECTOS POSTERIORES. Este producto contiene
solventes que pueden causar daños permanentes al cerebro o al sistema nervioso si se concentran y se inhalan deliberadamente.
Este producto contiene químicos que a largo plazo pueden causar cáncer y defectos de nacimiento u otros daños reproductivos. NO ES PARA USAR EN
INTERIORES FUERA DEL ALCANCE DE LOS NIÑOS.

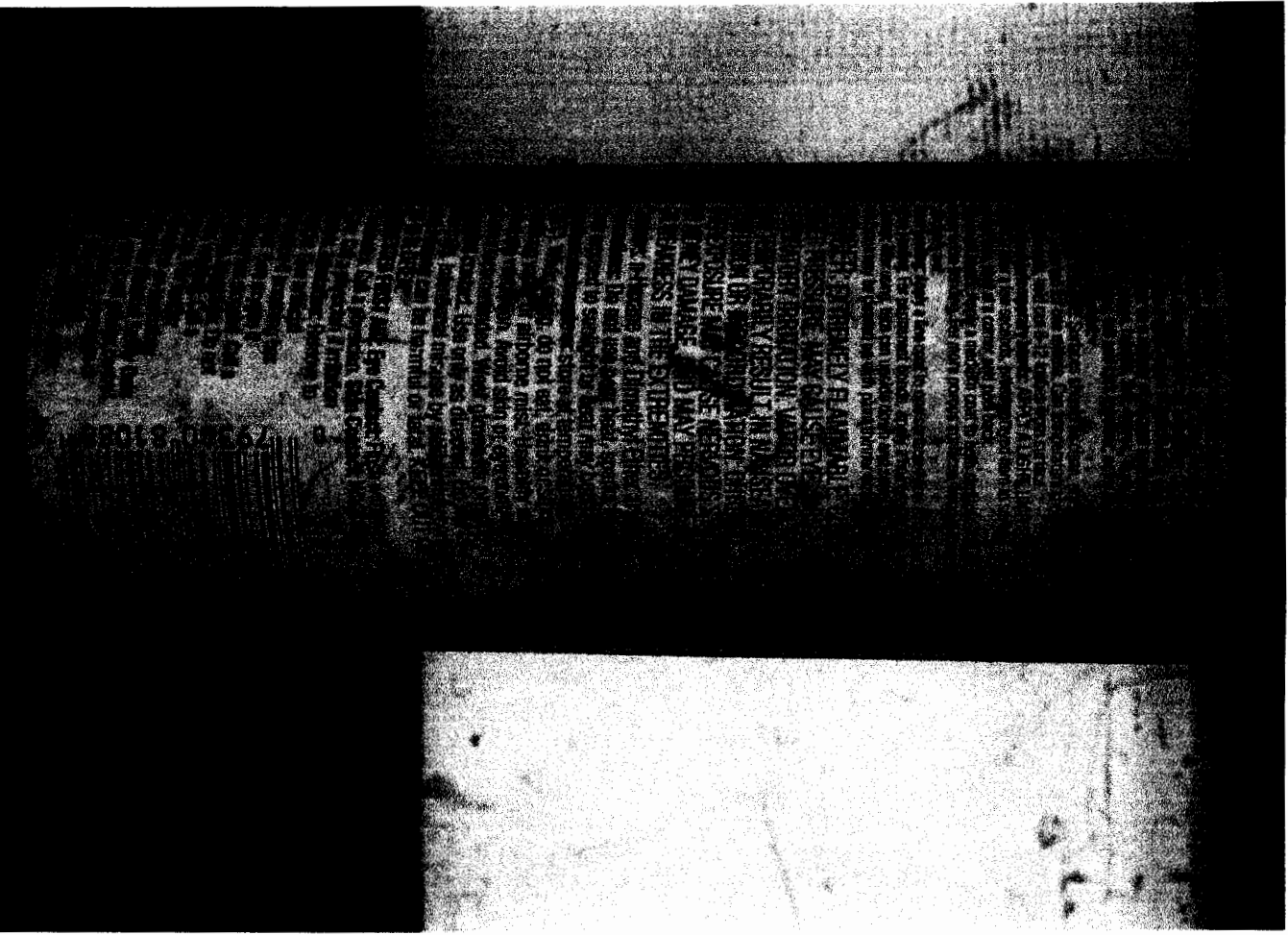
CONFORME TO ASTM D-4236. Contact a physician for more health information.
CUMPLE CON LA REGULACIÓN ASTM D-4236. Para obtener más información sobre
la salud, póngase en contacto con un médico.

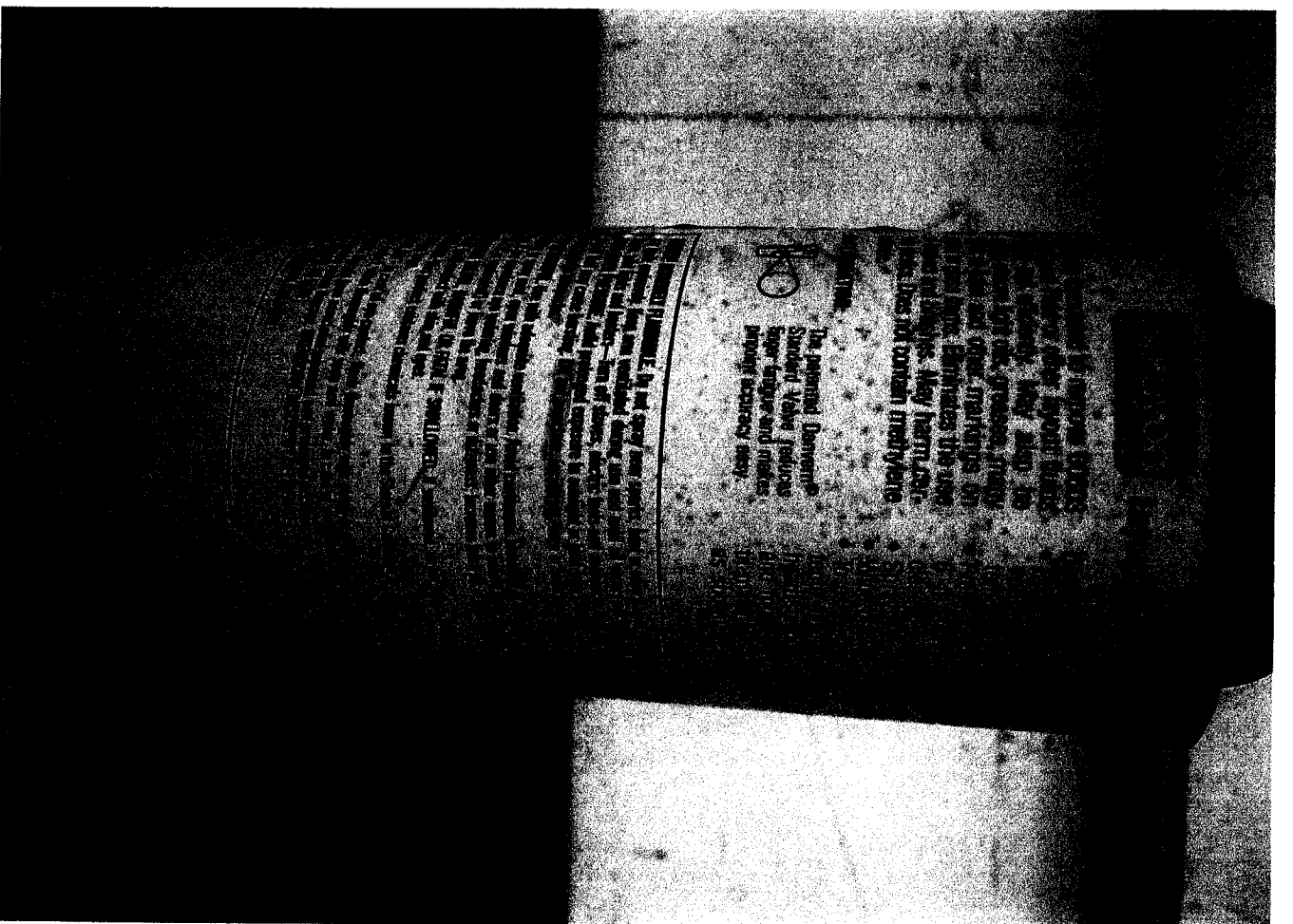
Easy Black
Aerosol

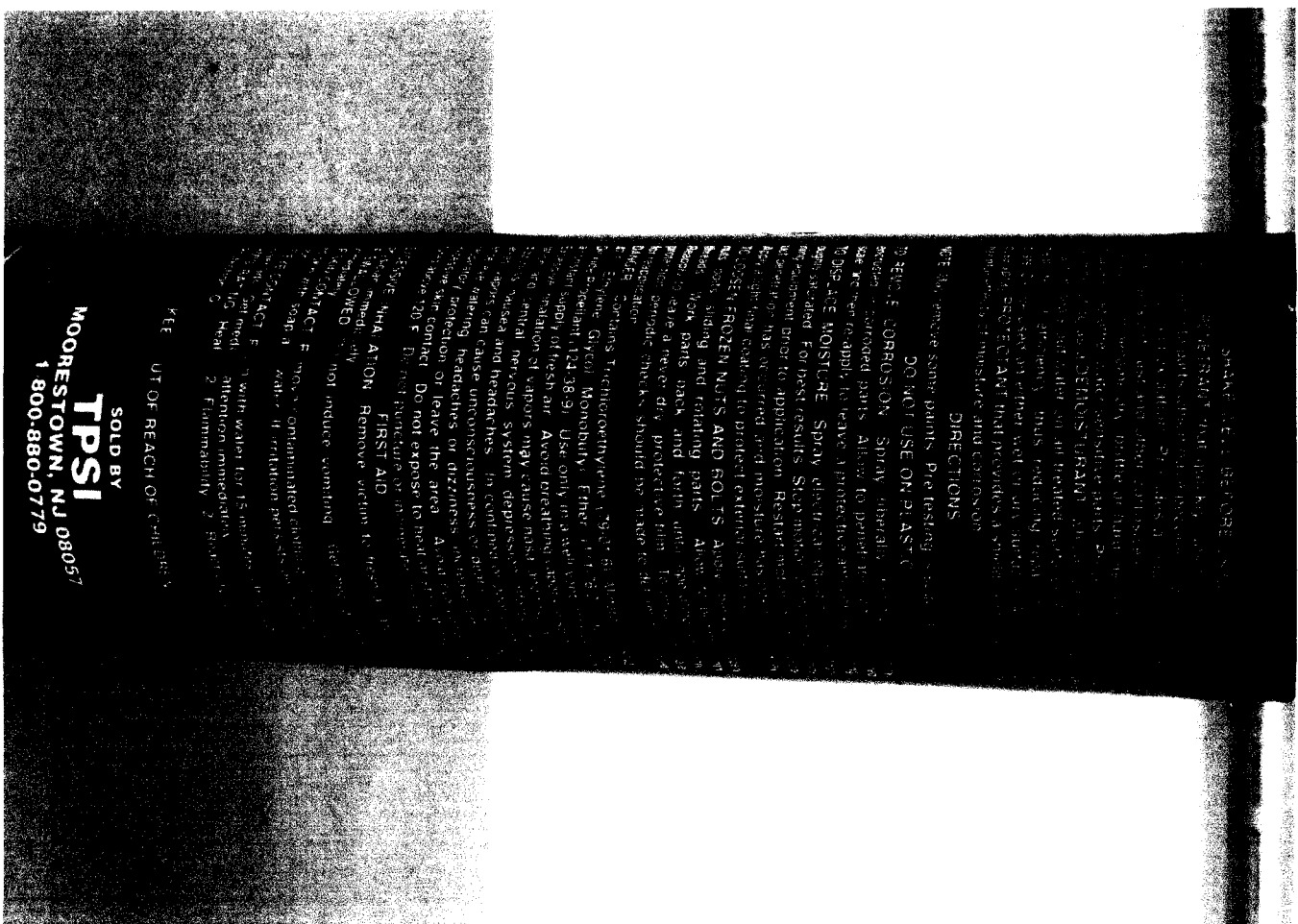
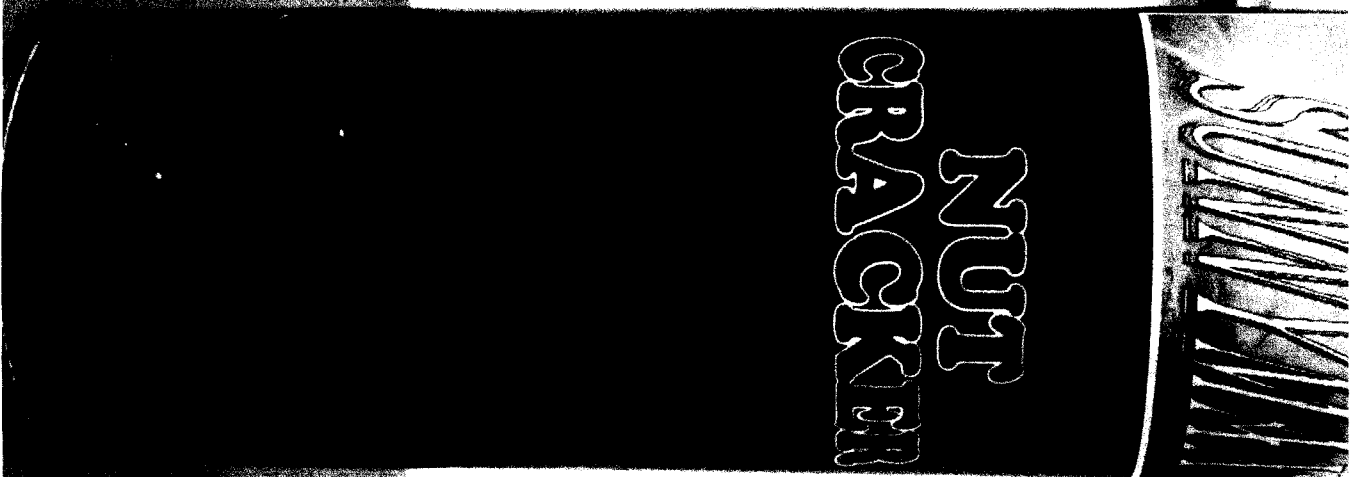




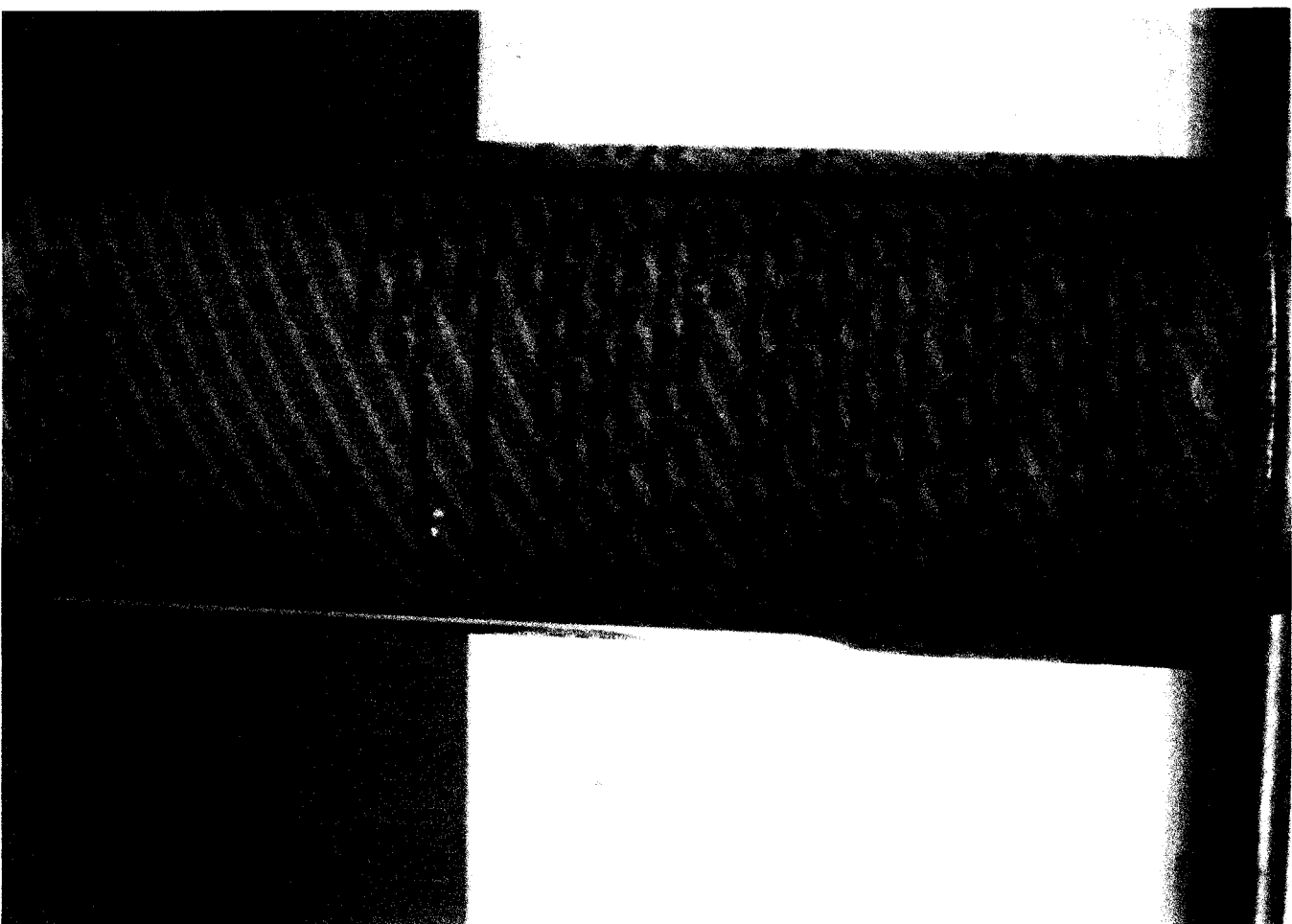




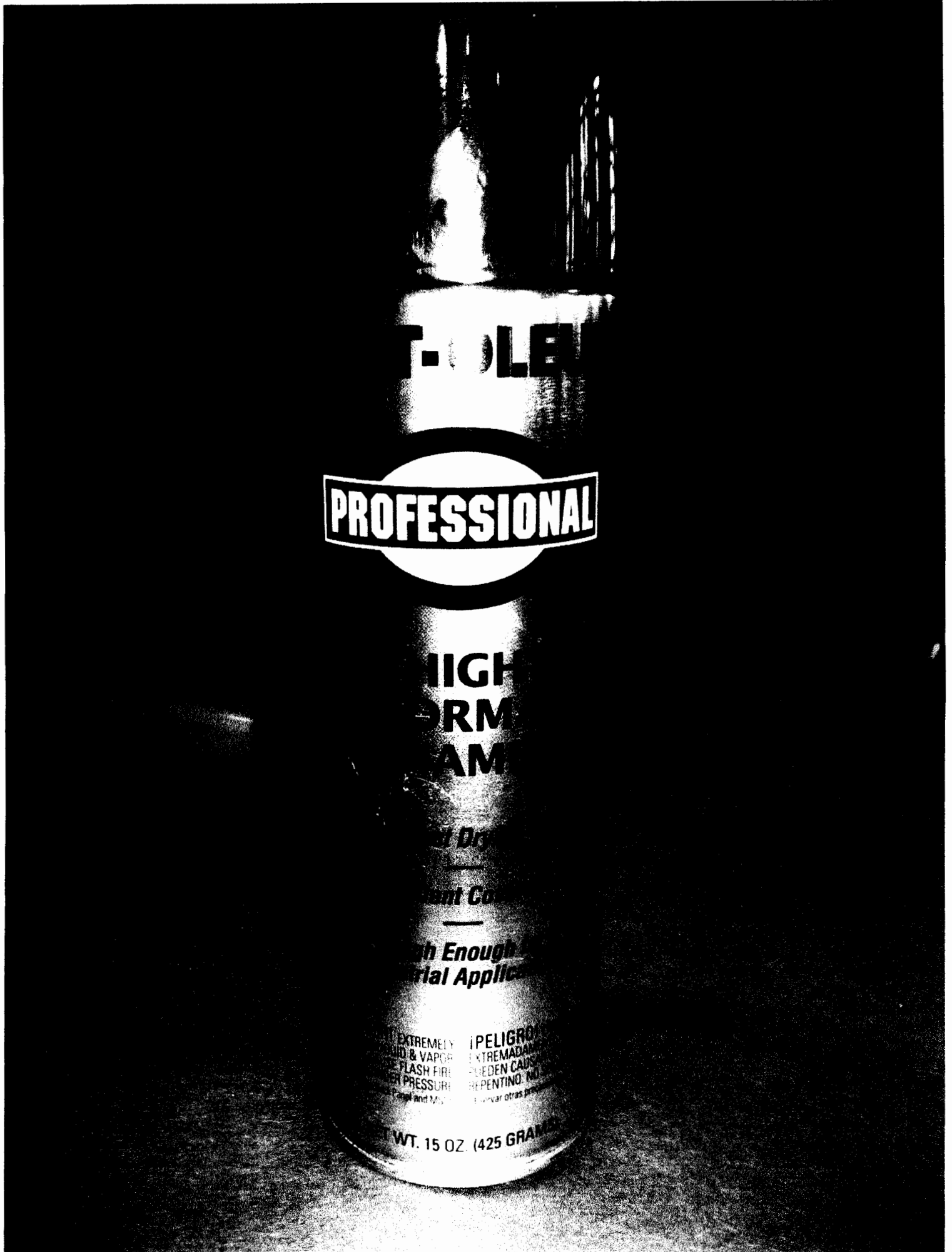




Attachment 5a
Baylis Aerosol cans

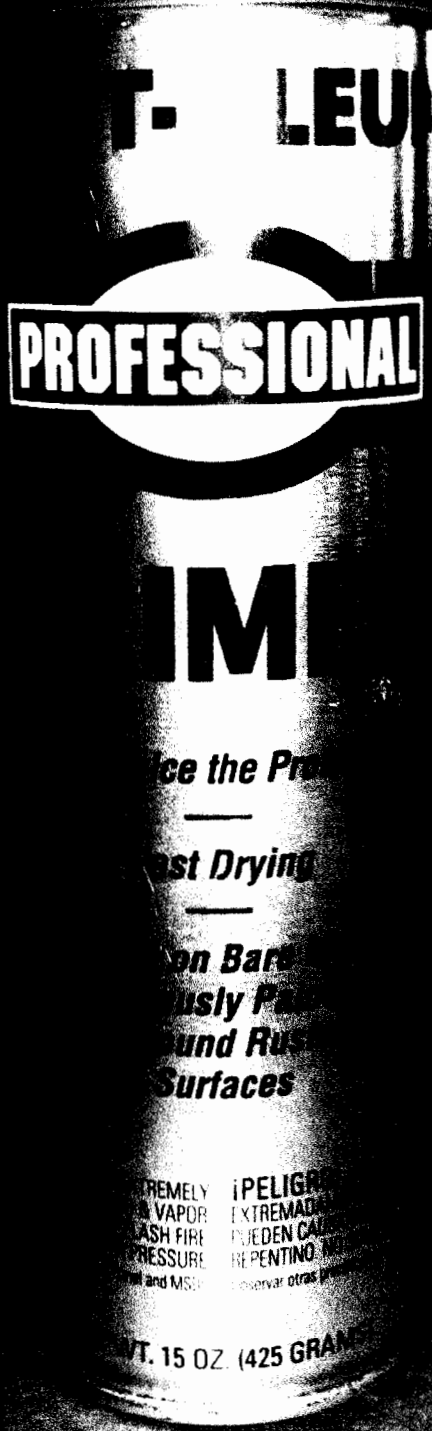


Page 15 of 15



**MANTENGALO RESERVADO
EXPONGA AL CALOR O AL
MAIOR SUPERFICIE
PARA USO DE PAPER**

Corporation Made in USA CBR2140 599



5.7

[illegible][illegible]

MANTENGA O PRODUTO SEMPRE EM TEMPERATURA AMBIENTE.
NÃO EXPOSTO A TEMPERATURAS ALTAS, COMO: forno, congelador, etc.

21

We stand behind you if you are dissatisfied with your Service Performance.

OUT OF REACH OF CHILDREN. DO NOT EXPOSE
OR STORE OVER 120°F (50°C). Unleaded-Safe
for use on children's toys, furniture, etc.

Page 4 of 8

Cap Approximates Color of Contents
La tapa es aproximadamente del mismo color que el contenido



INVERTED SPRAY PAINT

INVERTIDA



- Use For Handheld Marking
Úsela para Marcar a Mano
- Underground Utilities
Servicios Públicos Subterráneos
- Surveyor's Boundaries
Límites de Agrimensura
- Playing Fields
Campos de Juego
- Hazards
Peligros



Fluorescent Yellow

Fluorescent Blue

Safety Red

Utility White

DANGER! EXTREMELY FLAMMABLE VAPOR HAZARD

PELIGRO! EXTREMAMENTE INFLAMMABLE VAPOR DAÑINO

KEEP AWAY FROM FLAME. DO NOT USE NEAR FIRE OR FLAMES. PRECAUTIONS ON BACK OF CAN.

LEJOS DEL FUEGO. NO USAR CERCA DE FUEGO O FLAMAS. PRECAUCIONES EN LA PARTE POSTERIOR DEL LATÓN.

DO NOT EXCEED MAXIMUM PRESSURE

INVERTED SPRAY PAINT

Water-based spray paint designed for use to mark underground utilities, tanks, and hazards on any surface. It is formulated with CHAMPION SPRAYON CONDUIT WAX. It is a white spray paint that dries to a white finish.

DIRECTIONS

SHAKE WELL BEFORE USE

SURFACE PREPARATION

Remove dirt, grease, wax and other contaminants. Surface temperature should be 40°F (4°C) or higher. Do not spray on surfaces containing lead. For more information, visit www.epa.gov/lead.

APPLICATION

Shake well before use. Spray on surface in short, overlapping strokes. Shake occasionally during use. Allow to dry for about 12 to 16 hours before covering.

DRYING

Dries to the touch in 15 minutes. Full cure is achieved after 24 hours.

CLEANUP

Use spray button to clean nozzle. Do not use paint thinner. DO NOT use water. Replace spray button firmly with cap. After use, hold over a bucket of water and spray. Discard empty can in the dry cleaning or garbage compactor or burn.

DANGER: EXTREMELY FLAMMABLE MIXTURE

and open flames. Avoid contact with skin. May cause severe eye irritation. May cause prolonged exposure to cause skin irritation. May cause severe eye irritation.

WHEN USING INDOORS, KEEP WINDOWS AND DOORS OPEN UNTIL FUMES DISSIPATE

Use in a well-ventilated area. Avoid breathing of vapor. If you experience irritation, flush thoroughly with water. If you experience irritation, seek medical attention.

WARNING

This product may contain lead. Lead is a known neurotoxin. Lead can harm or even kill you. Lead can also harm your unborn child. Lead can also harm your children. Lead can also harm your pets. Lead can also harm your environment.

NOTICE

Report hazardous material releases to the appropriate authority. Do not use on surfaces that cannot be painted with this product. Do not use on surfaces that cannot be painted with this product. Do not use on surfaces that cannot be painted with this product.

PRECAUTIONS

Do not use on surfaces that cannot be painted with this product. Do not use on surfaces that cannot be painted with this product. Do not use on surfaces that cannot be painted with this product.

KEEP OUT OF REACH OF CHILDREN

MANTENGASE FUERA DEL ALCANCE DE LOS NIÑOS
MEDICAL EMERGENCY INFORMATION ONLY PARA INFORMACIÓN
MÉDICA DE EMERGENCIA. Chasen Inc. 2001-2004 4414

Chase

Products Co.
The best at your fingertips™
Box 70 • Maywood, IL 60153
www.chaseproducts.com

INVERTED

Water-based spray paint designed for use to mark underground utilities, tanks, and hazards on any surface. It is formulated with CHAMPION SPRAYON CONDUIT WAX. It is a white spray paint that dries to a white finish.

PREPARACIÓN DE LA SUPERFICIE

Eliminar la suciedad, la grasa, la cera y otros contaminantes. La temperatura de la superficie debe ser de 40°F (4°C) o superior. No se debe pintar sobre superficies que contengan plomo. Para obtener más información, visite www.epa.gov/lead.

APLICACIÓN

Agitar bien antes de usar. Pintar en la superficie con trazos cortos y superpuestos. Agitar ocasionalmente durante el uso. Dejar secar durante unos 12 a 16 horas antes de cubrir.

SECADO

Seque a tacto en 15 minutos. El curado completo se logra después de 24 horas.

LIMPIEZA

Usar el botón de pulverización para limpiar la boquilla. No utilizar thinner para pinturas. NO utilizar agua. Reemplazar el botón de pulverización firmemente con la tapa. Después de usar, mantener el producto sobre un cubo de agua y pulverizar. Descartar el envase vacío en el compactador de basura o en la pila de quemado.

PELIGRO: MEZCLA EXTREMAMENTE INFLAMABLE

Evitar el contacto con la piel. Puede causar irritación severa en los ojos. Puede causar irritación prolongada en la piel. Puede causar irritación severa en los ojos.

AL USAR EN INTERIORES, MANTENER LAS PUERTAS Y LAS VENTANAS ABIERTAS HASTA QUE SE DISIPEN LOS HUMOS

Usar en un área bien ventilada. Evitar la inhalación de vapores. Si experimenta irritación, enjuague con agua. Si experimenta irritación, busque atención médica.

ADVERTENCIA

Este producto puede contener plomo. El plomo es un neurotóxico conocido. El plomo puede dañar o incluso matarte. El plomo también puede dañar a tu hijo. El plomo también puede dañar a tus mascotas. El plomo también puede dañar el medio ambiente.

NOTA

Reportar la liberación de materiales peligrosos a la autoridad correspondiente. No usar en superficies que no se puedan pintar con este producto. No usar en superficies que no se puedan pintar con este producto.

PRECAUCIONES

No usar en superficies que no se puedan pintar con este producto. No usar en superficies que no se puedan pintar con este producto. No usar en superficies que no se puedan pintar con este producto.

MANTENER FUERA DEL ALCANCE DE LOS NIÑOS

MANTENGASE FUERA DEL ALCANCE DE LOS NIÑOS
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MÉDICA DE EMERGENCIA. Chasen Inc. 2001-2004 4414

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DELTRONIC

ANTHANA, CALIFORNIA

GAGE-LUBRICANT

NEW!

**IDEAL FOR PLAIN AND
THREAD PLUGS AND RINGS**

- Reduces gage wear
- Improves feel, accuracy
- Prevents seizing, galling
- Rust inhibiting

*Specially formulated for all precision gaging
applications, for everyday use*

DANGER Harmful or Fatal if
Swallowed. Contents under
Pressure. **CAUTION** Com-
bustible. Keep from heat or
Flame. Keep out of Reach
of Children. Read Caution on
Side Panel.

NET WT 12 OZ

• **GAGE LIFE EXTENDED** thru lowered coefficient of friction • **BETTER THAN LANOLIN** lanolin-based products (will not develop acidity, no resin build-up) • **SELF-SPREADING** thru capillary action • **DISPLACES AND LIFTS** finger print contamination, stops skin-acid damage • **NON-DRYING FILM** provides long-lasting lubricity • **EXTREMELY LOW VISCOSITY** improves "feel" no oily build-up with repeated applications • **UP TO 10,000** sprays in each can very economical low-cost lubricant • **PROVIDES** excellent short term protection against rust under normal shop conditions • **EASY TO REMOVE**, simply wipe clean • **PIN-POINT WAND** for no-waste application

DIRECTIONS

Use pin point wand inserted in nozzle for normal gage applications. Lubricant can be applied to gage or part, simply touch wand to area and depress nozzle slightly, lubricant is self-spreading. For large precision surfaces, use regular spray can nozzle, hold can 15" from clean surface and depress plunger fully down. **USE SPARINGLY**, but apply as often as needed for repeated gaging.